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FAUNA
BOREALI-AMERICANA.

THE BIRDS.

VOL. II.

FALCO SPARVERIUS.

London. Printed for John Murray, Bookseller to the Admiralty, January 1st 1829.

FAUNA

BOREALI-AMERICANA;

OR THE

ZOOLOGY

OF THE

NORTHERN PARTS

OF

BRITISH AMERICA:

CONTAINING

DESCRIPTIONS OF THE OBJECTS OF NATURAL HISTORY COLLECTED ON THE LATE NORTHERN LAND EXPEDITIONS UNDER COMMAND OF CAPTAIN SIR JOHN FRANKLIN, R.N.

PART SECOND,

THE BIRDS.

BY

WILLIAM SWAINSON, Esq., F.R.S., F.L.S.,

HONORARY OR CORRESPONDING MEMBER OF SEVERAL FOREIGN SOCIETIES.

AND

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SURGEON AND NATURALIST TO THE EXPEDITIONS.

ILLUSTRATED BY NUMEROUS PLATES AND WOODCUTS.

PUBLISHED UNDER THE AUTHORITY OF THE RIGHT HONOURABLE THE SECRETARY OF STATE FOR COLONIAL AFFAIRS.

LONDON:

JOHN MURRAY, ALBEMARLE-STREET.

MDCCCXXXI.

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Stamford Street.

ADVERTISEMENT.

Mr. Swainson's contributions to the following pages have the letters Sw. subjoined, except in one or two instances, where they have been accidentally omitted. It is to be understood, however, that all the remarks on natural arrangement are his, and that the specific names and synonymes are given on his authority, having been either supplied or revised by him.

In the descriptions, "Werner's Nomenclature, by Syme," has been adopted as the standard for the names of the colours, the specimens having been invariably compared with the coloured patterns previous to noting down the hue of the plumage. The measurements are in inches and lines, or twelfth parts of an inch. The total length of the bird is measured from the tip of the bill to the end of the tail, the neck being on the stretch. In the Falconidæ and Strigidæ, the length of the longest quill when plucked from the wing is given; but this having been found inconvenient in practice, the length of the folded wing from the tip of the longest feather to the bend of the carpal joint is recorded in the descriptions of the succeeding families. The dimensions of the bill are generally taken both from the feathers of the forehead, following the curve of its ridge,—and from the rictus or angle of the mouth, in a straight line to the tip. The tail is measured from its extremity to the insertion of the quills in the coccyx; and in the length of the tarsus are included its articular cartilages; that is, the points of the compasses were placed in the centres of the tarsal and metatarsal joints. The lengths of the toes are given separately from the nails.

THESE LISTS ARE SUBJOINED, THAT THE ORNITHOLOGIST MAY KNOW WHERE TO FIND THE SPECIMENS DESCRIBED IN THE FOLLOWING PAGES.

Presented to the Zoological Society *by order of the Right Hon. the Secretary of State for the Colonies.*

Aquila chrysaëta. Haliæetus leucocephalus. Circus cyaneus. Strix cinerea. Bubo Virginianus. B. arcticus. Strix funerea. Strix Tengmalmi. Lanius borealis. L. excubitorides. Tyrannus intrepidus. Tyrannula Saya. Tyr. pusilla. Tyr. Richardsonii. Cinclus Americana. Merula minor. M. Wilsonii. M. solitaria. Orpheus meruloides. O. rufus. O. felivox. Sialia arctica. Sylvicola æstiva. S. maculosa. S. petechia. S. striata. Vermivora rubricapilla. V. peregrina. Setophaga Bonapartii. Parus atricapillus. Seiurus aurocapillus. S. aquaticus. Anthus aquaticus. Vireo olivaceus. Bombycilla Americana. Alauda cornuta. Plectrophanes Lapponica. P. picta. Emberiza pallida. Fringilla leucophrys. F. Pennsylvanica. F. iliaca. F. hyemalis. Pipilo arctica. Loxia leucoptera. Fringilla purpurea. Linaria tephrocotis. L. minor. Agelaius xanthocephalus. Scolecophagus ferrugineus. Garrulus brachyrhynchus. Picus tridactylus. P. arcticus. Troglodytes ædon. Tr. hyemalis. Tr. palustris. Hirundo Americana. H. lunifrons. Tetrao obscurus. T. Canadensis. T. Franklinii. T. saliceti. T. rupestris. T. leucurus. T. phasianellus. Strepsilas interpres. Grus Canadensis. Ardea lentiginosa. Numenius Hudsonius. N. borealis. Tringa Douglasii. T. alpina. T. Schinzii. Totanus semipalmatus. T. vociferus. T. flavipes. T. Bartramius. T. chloropygius. Limosa Hudsonica. Scolopax Novoboracensis. Sc. Drummondii. Rallus Carolinus. Fulica Americana. Phalaropus Wilsonii. Podiceps cornutus. Sterna nigra. Larus glaucus. L. zonorhynchus. L. brachyrhynchus. L. Franklinii. L. Bonapartii. Lestris Richardsonii. Anas discors. Mareca Americana. Oidemia perspicillata. O. fusca. Fuligula Vallisneria. F. ferina. F. rufitorques. F. rubida. Clangula Barrovii. Cl. histrionica. Harelda glacialis. Mergus cucullatus. Colymbus glacialis. C. septentrionalis. [In all 130 specimens.]

Presented to the Museum of the University of Edinburgh.

Accipiter palumbarius, *male & fem.* Buteo borealis. B. lagopus. Circus cyaneus, *male, fem. & young.* Strix otus. S. brachyota. S. cinerea. S. Virginiana. S. funerea. S. Tengmalmi. Tyrannus intrepidus. Tyrannula Saya. Cinclus Americanus. Merula migratoria. M. Wilsonii. Sylvicola maculosa. Setophaga ruticilla. Parus atricapillus. Anthus aquaticus. Bombycilla garrula. B. Americana. Fringilla leucophrys. F. Pennsylvanica. F. graminea. Pipilo arctica. Dolichonyx oryzivorus. Agelaius phœniceus, *male & fem.* A. xanthocephalus. Sturnella Ludoviciana. Icterus Baltimore. Quiscalus versicolor, *male & fem.* Scolecophagus ferrugineus, *male & fem.* Corvus corone. C. pica. Picus pileatus. P. villosus, *male & fem.* P. pubescens. P. varius. P. arcticus. P. tridactylus, *male & fem.* Colaptes auratus, *male & fem.* Caprimulgus Virginianus. Hirundo purpurea. Alcedo alcyon. Tetrao umbellus, *male & fem.* T. obscurus. T. Canadensis, *male, fem., & young.* T. saliceti, *spring* and *wint.* T. leucurus, *summer* and *wint.* T. phasianellus. Charadrius vociferus. C. pluvialis. Strepsilas interpres. Ardea lentiginosa. Tringa Douglasii. T. Schinzii. Totanus semipalmatus. T. vociferus. T. flavipes. T. Bartramius. T. chloropygius. Limosa fedoa. L. Hudsonica. Rallus Carolinus. Phalaropus Wilsonii. P. hyperboreus. Podiceps cornutus. Sterna nigra. Larus zonorhynchus. L. Franklinii. L. Bonapartii. Anas clypeata, *male & fem.* A. strepera. A. crecca. A. discors, *fem. & young.* Mareca Americana. Oidemia perspicillata, *male & young.* O. fusca. Fuligula Vallisneria, *male & fem.* F. marila. F. rufitorques, *male & fem.* F. rubida. Clangula vulgaris, *male & young.* C. albeola, *male & fem.* Harelda glacialis, *male & fem.* Mergus merganser. M. cucullatus.—86 species, in addition to 40 specimens collected on the *first* Expedition, and also preserved in the Edinburgh Museum.

Twelve specimens were likewise sent to the Plymouth Museum, pursuant to his Majesty's commands; and between 70 and 80 species have been presented to Mr. Swainson, by permission of the Right Hon. the Secretary of State for Colonial affairs*.

* Mr. Swainson has deposited specimens from his own collection, of the true *Vireo olivaceus* and *Tyrannula rapax*, in the British and the Edinburgh Museums. To the former he has also sent *Vireo Bartramii*.

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INTRODUCTION

TO THE

SECOND VOLUME;

BY

DR. RICHARDSON.

SCIENCE is indebted to the exertions of the Hudson's Bay Company for almost all that is known of the Ornithology of the American Fur-countries; under which term we comprehend generally *the whole country north of the forty-eighth parallel of latitude.* The French Canadians were the first, indeed, who penetrated into the regions beyond the Great Lakes in pursuit of peltry; but the few journals of their proceedings that have come down to us, though rich in personal adventure, contribute nothing to Natural History, beyond incidental anecdotes of the animals that are objects of chase. In like manner, the earlier English navigators, who, in exploring Hudson's Bay and the Arctic Seas, aided in laying the foundation of the naval glory of their country, limited their notes on Zoology to brief remarks on the animals used for food, but seldom or never gave descriptions sufficiently characteristic to identify the species.

The first collections of Hudson's Bay birds of which I can find any record, are those formed by Mr. Alexander Light, who was sent out, ninety years ago, by the Hudson's Bay Company, on account of his knowledge of Natural History; and by Mr. Isham, who, during a long residence, as Governor of various forts or trading-posts, employed his leisure hours in preparing the skins of beasts, birds, and fishes. These two gentlemen returning to England, about the year 1745, fortunately for the advancement of Ornithology, entrusted their

specimens to Mr. George Edwards, who did them ample justice, in his splendid "Natural History of Birds*," the most original and valuable work of the kind in the English language. In the first volume, he has figured and described with accuracy *ten* of Mr. Light's birds, and in his third volume, which appeared in 1749, *thirty-two* of Mr. Isham's are equally well illustrated †.

In that year also, Ellis published his account of the voyage of the Dobbs and California, wherein he mentions some of the animals that came under his notice in the winter of 1747, which he passed in Hayes River ‡; and a narrative of the proceedings of the same voyage, by Mr. Drage, Clerk of the California, is still more full on points relating to Natural History. During the next twenty years, no additional information was obtained of the Zoology of those parts; but Mr. William Wales having been sent to Hudson's Bay, in 1768, to observe the transit of Venus, Mr. Graham, Governor of the Company's post at Severn River, embraced the opportunity afforded by his return to England, of transmitting a collection of quadrupeds, birds, and fishes to the Royal Society. These being described by John Reinhold Forster, in the Philosophical Transactions for 1772 §, excited the attention of the scientific world; and, by desire of the Royal Society, directions were given by the Governor and Committee of the Hudson's Bay Company that objects of Natural History should be annually sent to England. Mr. Humphrey Martin, accordingly, sent home several hundred specimens of animals and plants, collected at Albany Fort, of which he was Governor; and Mr. Hutchins, who succeeded him in that office, was still more industrious,

* Edwards presented a copy of this work, coloured by his own hand, to the Royal Society; and another copy, which he sent to Linnæus, returning to England again when Sir James Smith acquired the invaluable museum and library of that prince of naturalists, is now in the possession of the Linnean Society. The Linnean specific names are added to it in manuscript.

† In four instances Edwards devotes separate plates to the males and females, which reduces the number of species of birds from Hudson's Bay, introduced into his work, to *thirty-eight*.

‡ York Factory is situated on the alluvial point of land which separates this river from the more important stream of Nelson's River, and is the place where the principal part of the *waders* and *water-fowl* collected on Sir John Franklin's first Expedition were procured.

§ The species of birds enumerated by Forster are fifty-seven, of which twenty-two had been previously made known by Edwards; while sixteen, figured by the latter, do not enter Forster's list.

not only in preparing many specimens, but in drawing up minute descriptions of all the quadrupeds and birds he could obtain, adding their native names, with notices of their nidification, food, and habits. His observations *, which, in fact, embrace almost all that has been recorded of the habits of the Hudson's Bay birds up to the present time, being communicated to Latham and Pennant, are incorporated in the "General Synopsis of Birds," and in "Arctic Zoology." Indeed, Pennant, in some instances, appears to have adopted Mr. Hutchins's descriptions, though unaccompanied by specimens, prefixing the names of nearly-resembling European birds, which an actual comparison would have shown to have been quite distinct; and in this way several species have been enumerated in systematic works as natives of Hudson's Bay, which do not actually exist there. On the other hand, Mr. Hutchins has distinctly noticed a few species which have been but very lately admitted into the ornithological systems.

Captain Cook's third voyage, in 1777-8, contains some information respecting the animals of the north-west coasts of America and Behring's Straits, but, unfortunately, no figures of the birds were published; and the compendious notices which are contained in the works of Pennant and Latham, defective as they are in details of structure, are, in many instances, insufficient to enable us to identify the species, or to ascertain their proper situation in the system. The specimens themselves, collected on this and Cook's other voyages, of unrivalled extent and interest, which ought to have been carefully preserved for reference in a national museum, have either gone to enrich foreign collections, or are entirely lost to science.

Pennant's "Arctic Zoology," which appeared in 1785, contains the fullest account of the birds of Arctic America which has hitherto been published. It embraces the species introduced by Latham in his "Synopsis," which was then in course of publication; but, in common with other ornithological works of that period, it includes many specific names, attached merely to a different state of plumage,

* In one volume folio, in the Library of the Hudson's Bay Company.

resulting from age or sex. Exclusive of these *nominal* species, Pennant describes seventeen from the north-west coast and Behring's Straits, collected on Captain Cook's Expedition, and eighty-three from Hudson's Bay, of which seventy-three had been previously made known by Edwards and Forster. Umfreville's "Account of Hudson's Bay," and Hearne's "Journey to the Coppermine River," published in 1795, give some interesting details of the habits of the more common birds.

There is no evidence in the Philosophical Transactions, of the orders of the Hudson's Bay Company, in 1772, above alluded to, having been beneficial to science through the channel of the Royal Society; but their instructions served to acquaint the residents with the value set, in England, upon the natural productions of the northern regions; and collections, chiefly of birds, have continued to be transmitted annually to London up to the present time, as presents either to the Governor and Committee or to the personal friends of the parties. The former, besides forming a museum of the Hudson's Bay productions, which is liberally open to the public, have presented numerous specimens to the British Museum and Zoological Society. Private museums have also been greatly enriched from these sources, among which that of Joseph Sabine, Esq., is particularly deserving of notice. This gentleman has long studied the Ornithology of Hudson's Bay, and it is to be regretted that he has hitherto laid before the public only a part of the extensive information he has acquired on the subject. His Appendix to the Narrative of Sir John Franklin's *first* Journey shows how well he could have performed the task had he found leisure. He has lately transferred his rich museum to the Andersonian Institution of Glasgow. Mr. Leadbeater's invaluable collection also contains an extensive suite of birds from Hudson's Bay, some of which have been recently figured in the American Ornithology of the Prince of Musignano, and are among the most interesting novelties in that splendid work.

The voyages of Vancouver, Portlock, Meares, and Langsdorff, to the north-west coast, added little to Ornithology; nor is there much cer-

tain information to be derived from the notices of Lewis and Clark of the birds they saw on the banks of the Columbia. They were unable to bring many specimens across the mountains, and their descriptions are in general too vague for scientific purposes, which is, perhaps, attributable to the untimely death of Governor Lewis previous to the publication of the work.

All this, however, would have been compensated by the indefatigable researches of Mr. David Douglas, which would have made the birds of the north-west coast equally familiar to Europeans with those of Hudson's Bay, had not his extensive collections gone to decay, through the length of the voyage and other causes beyond his control. He is now a second time exploring that interesting country, and we look with much anxiety for the rich harvest he is sure to reap.

Eschscholtz and Chamisso, the naturalists who accompanied Kotzebue on his voyages to the Russian-American settlements and Behring's Straits, doubtless acquired a knowledge of the birds of the places they visited; but only some detached notices of their discoveries in Natural History have as yet reached this country. The more recent voyage of Captain Beechey has also been productive of much advantage to natural science; and I rejoice that Mr. Vigors has undertaken the task of bringing the ornithological discoveries before the public *.

Almost the only information we have of the birds of the extreme northern coasts of America is contained in the Natural History Appendices to the voyages of Ross and Parry. Having had access to many of the specimens procured on these voyages, and preserved in the British and Edinburgh Museums, I have described them in the present work †.

* I should gladly have availed myself of the kindness of the Author, who entrusted me with the proof-sheets, to have rendered this work more complete, by giving a list of the species that frequent the north-west coast; but very few of the specimens brought home on that Expedition had notes attached to them to indicate their locality, so that the native places of many are uncertain.

† I embrace the opportunity here afforded of again returning my sincere thanks to Charles König, John George Children, and John Gray, Esqrs., of the British Museum; to Robert Jameson, Esq., Regius Professor of Natural History in the University of Edinburgh; and Nicholas Aylward Vigors, Esq., Secretary to the Zoological Society; for the great facilities they have invariably afforded me of

As the specimens obtained on Sir John Franklin's two Expeditions furnish almost the whole of our authentic information of the Ornithology of the *interior* of the Fur-countries, it remains that I should add to the preceding brief notice of the sources of our knowledge of the feathered tribes that frequent the *coast line* of *Arctic America* a few remarks on the *circumstances under which the collections were made.* The reader will thus be better enabled to form some opinion on the proportion which the species described in this work bear to the whole that frequent the Fur-countries.

In the first place, I have to state that, in neither Expedition, did Ornithology occupy much of our attention. The want of means of transport for bulky packages in the overland marches, and the difficulty of preserving from injury recent specimens of birds, on the numerous carrying places which occur on the canoe route, induced us to devote the whole of our spare time during the journey to Botany and Mineralogy. As the entire summer of each year was spent in travelling, we did not reach our winter quarters until after almost all the migratory birds had retired to the southward. Nothing could, therefore, be done beyond securing examples of the few resident birds, until the following spring, when the interval of a month or six weeks, which occurred between the first melting of the snow and the commencement of the summer journey, was devoted almost exclusively to collecting birds. Many of the specimens were shot by the other officers, but they were all prepared by Mr. Drummond or myself.

The collection made on the *first Expedition* was formed in the several springs of 1820, 21, and 22, on the Saskatchewan, at Fort Enterprise, and on Great Slave Lake respectively; and in the autumn of 1822, at York Factory (lat. 57°), Hudson's Bay. We arrived at the latter place on the 14th of July; and betwixt that date and our departure for England, in the beginning of September, we had an opportunity of

consulting the museums under their charge, and the desire they have constantly manifested of furthering my researches by every means in their power. I am, likewise, under many obligations for similar kindnesses to the Governor, Deputy-Governor, and Committee of the Hudson's Bay Company, and to Mr. Smith, their Secretary; and also to William Yarrell, Esq., and Mr. Leadbeater, for the liberal access they have given me to their collections.

obtaining a very considerable number of birds, chiefly *waders*, which assemble in flocks at the mouth of Hayes River, previous to taking their departure southwards on the setting in of the frost *. Mr. Sabine, who wrote the Zoological Appendix to the Narrative of that Expedition, notices seventy-one species of birds. Want of leisure, however, caused him to omit several of the waders, and a portion of the collection never reached him, being lost after its arrival in England.

On the *second Expedition* specimens of birds were collected at Fort Franklin, on Great Bear Lake, in the spring of 1826, between the 8th of May and 14th of June, being the periods of the first arrival of the migratory birds and the commencement of our voyage to the coast; and, in 1827, the months of April and May and one-half of June were devoted to the same purpose at Carlton and Cumberland House, on the banks of the Saskatchewan. Having the able assistance of Mr. Drummond in the latter period, the bulk of the collection was then formed. Mr. Drummond also shot two or three species on the declivity of the Rocky mountains that were not seen elsewhere; and a very few were prepared in the course of our summer journeys.

It is evident, from the short time allotted to the task, that we could hope to obtain only the more common birds. The Prince of Musignano enumerates a somewhat greater number of species in his Synopsis of American Birds, than those contained in Temminck's Manual of European Ornithology; and as the country we traversed north of the Great Lakes exceeds in extent the whole of Europe lying higher than the forty-eighth degree of latitude, we shall not, perhaps, err greatly in ascribing to the Fur-countries as great a variety as Europe presents within the same parallels.

The present work contains two hundred and forty species, and above twenty-seven in addition are described by Pennant and Vigors

* This was the only autumn collection made on either Expedition, and we regret that we have not been able to avail ourselves of it, so much as we could have wished, in drawing up the present work. Exclusive of the specimens above alluded to as having been entirely lost, many were destroyed by moths in London; and the only portion of the collection which I can now trace are forty specimens, which were presented to the Museum of the University of Edinburgh, and are still in good order.

as inhabitants of the north-west coast*, making in all two hundred and sixty-seven. Now, according to Temminck's Manual, there are three hundred and twenty-six† birds which range in Europe to the northward of the forty-eighth parallel; so that the number of species that remain to be detected in the Fur-countries will not, probably, much exceed sixty; and we have some reasons, connected with the circumstances under which the collections were made for believing, that the majority of these will prove to belong to the families of *Sylviadæ*, *Fringillidæ*, and *Charadriadæ*. Several of the *Procellariæ* are also known to inhabit Hudson's Bay and the Arctic Sea; but, from our want of means of identifying the species, they have been omitted.

The same causes that tended to limit our means of collecting operated, together with my previous ignorance of Ornithology, to prevent my recording the habits of the species to the extent and with

* List of species that frequent the north-west coast of America, from Pennant's *Arctic Zoology*; with references to those described in this work:—

No.
139 Steller's Crow, *Nootka Sound.* (*Garrulus Stelleri*, Sw., p. 294, hujus operis.)
151 Unalaschka Oriole.
160 Red-headed Woodpecker. (*Melanerpus erythrocephalus*, p. 316.)
168 Three-toed ditto, *Norton Sound.* (*Picus* (*Apternius*) —— ? p. 311 ? 313 ?)
169 Belted Kingfisher. (*Alcedo alcyon*, p. 339.)
177 Ruffed Honey-sucker, *Nootka.* (*Trochilus* (*Selasphorus*) *rufus*, p. 324.)
186 Norton Sound Bustard.
197 Varied Thrush. (*Orpheus meruloides*, Sw., p. 187.)
202 Unalaschka Thrush.
207 Chatterer, lat. 64° 30′. (*Bombycilla garrula*, p. 237.)
229 Unalaschka Bunting. (*Fringilla arctica*, Vigors, *Beechey's Birds*, p. 20 ?)
230 Black-crowned ditto, *Nootka Sound.*
232 Unalaschka ditto (second species).
251 Ferruginous Finch, (a variety,) *Unalaschka.*
256 Norton ditto.

No.
260 Cinereous Finch.
381 Black Snipe. (Steller.)
394 Gambet Sandpiper, lat. 69½°.
397 Little ditto, *Nootka Sound.*
413 Tringa fulicaria. (*Phalaropus fulicarius*, p. 407.)
415 Plain phalarope. (p. 408.)
430 Antient Auk.
432 Tufted ditto. (*Mormon cirrhatus*, Bon., *Syn.*, No. 378.)
431 Pigmy ditto, *Behring's Straits.*
433 Perroquet ditto, } *ditto.* (*Phaleris psitaccula*, Bon.,
435 Dusky ditto, } *Syn.*, No. 376.)
434 Crested ditto, *ditto.* (*Phaleris cristatella*, Id. p. 426.)
436 Marbled Guillemot. (*Uria marmorata*, Id. No. 372.)
457 Ivory Gull, *Behring's Straits.*
463 Fork-tail Petrel, *ditto.*
473 Bering Goose. (Steller.)
497 Western Duck.
510 Gannet.
534 Giant Petrel.

The Prince of Musignano and Mr. Vigors give, in addition to the above,

Charadrius pluvialis, *Chamisso Island.* (p. 369.)
Mormon glacialis, *Behr. Straits.* (Bon., *Syn.*, No. 379.)
Cerorhinca occidentalis, *ditto.* (Id.)
Larus Sabinii, *Behr. Straits.* (p. 428)
Diomedea fuliginosa, *Aleutian Islands.* (Vig., *Beechey's Birds*, p. 89.)

Lewis and Clark, and the authors we have mentioned in the text, indicate several others.

† The whole number of European birds described in Temminck's Manual is three hundred and eighty, of which two hundred and thirty-five are land-birds. Bonaparte's Synopsis of the Birds of the United States contains three hundred and eighty-two species, of which two hundred and fifteen are land-birds; and one hundred and sixty-seven belong to the orders of Grallatores and Natatores.

the accuracy required for the purposes of science. With the view of obviating this defect in some degree, and of rendering the work more popular, I began by introducing occasional extracts from the lively and accurate pen of Wilson. I soon found, however, that a continuance of this practice would have swelled the work to an undue size, and have left no room for Mr. Swainson's important and interesting observations on natural arrangement. It was, therefore, laid aside; and, at the suggestion of Mr. Swainson, the succeeding descriptions were much and advantageously compressed *.

The discovery of the laws which regulate the distribution of the species over the face of the globe, being one of the most important ends of the publication of local *Faunæ*, the scanty contributions of facts that we have been enabled to make are thrown, for the greater facility of reference, into a tabular form. The New World is peculiarly adapted for researches of this kind; its two extremities, and almost every intermediate zone, are accessible, and, it is to be hoped, will hereafter be minutely investigated for the purposes of natural science. When accurate lists of the resident birds in each region, and of the summer and winter visiters, are obtained, many highly interesting and unexpected deductions will doubtless be made, and much theoretical reasoning exploded. The Prince of Musignano has performed a great service to science in furnishing such a list for the neighbourhood of Philadelphia †, of which we have availed ourselves in the construction of the following table. Had it been in our power to have drawn up an equally complete list for the Fur-countries, the general movements of the feathered tribes through North America would have been rendered apparent.

Birds are usually divided into migratory and resident, though comparatively few in the Fur-countries are strictly entitled to the latter appellation. The *Raven* and *Canadian* and *Short-billed Jays* are, indeed, the only species which we recognized as being equally nume-

* The announcement at this period of two editions of Wilson's inimitable work, by different editors, at a price which will place them within the reach of every ornithologist, was a further inducement to us to abstain from borrowing from it.

† Specchio Comparativo delle Ornitologie di Roma e di Filadelfia, di C. L. Bonaparte, Principe di Musignano. Pisa. 1827.

rous at their breeding-places in winter as in summer; and they pair and begin to lay eggs in the month of March,—nearly three months earlier than any other bird in those quarters.

The distribution of the migratory and resident birds is evidently governed, as far as climate is concerned, by very different laws. The *winter temperature*, regulating the depth and duration of the snow and ice, and consequently the supply of vegetable productions, insects or fish at that season exerting a principal influence on the number of resident birds, whose distribution may be considered as bearing much analogy to that of quadrupeds. While the influx of migratory birds into the northern regions for the purpose of rearing their young is more connected with the high summer temperature of those parallels, the mean annual heat, which is very low, being no criterion as to the number or variety of summer visiters *.

* The following Table gives a view of the temperatures of various stations in North America, the extremes being forty-five degrees of latitude apart. Our limits do not admit of the Table being more extended, but the reader who wishes to enter fully into the subject, may consult Dr. Lovell's valuable tables, appended to the Narrative of Long's Expedition to St. Peter's River, from which the temperatures for Fort St. Philip and Philadelphia have been extracted, and the Edinburgh Philosophical Journal for April, 1825, or the Appendices to Sir Edward Parry's and Sir John Franklin's several Narratives, which furnished the materials for the rest of the Table. It may be observed, that the mean annual temperature decreases as we advance northwards $1\frac{1}{2}^{\circ}$ F. for each degree of latitude, while the decrease of mean heat in July does not exceed 1°. The three last lines are omitted in this calculation, as the observations recorded in them were made among fields of ice, which reduce the summer temperature greatly below what it is even a few miles inland. The snow is perpetual in no part of the Fur Countries, except on the elevated peaks of the Rocky Mountains.

Places.	Position.			Mean temperature of the Air.				*Max.* in the Year.	*Min.* in the Year.
	Lat. N.	Long. W.	Height above the Sea in feet.	*Annual.*	*Summer.* June, July, August.	*Winter.* December, January, February.	*Warmest Month,* July.		
				Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.
Fort St. Philip	29° 29′	89° 21′	..	+70°.07	+82°.89	+54°.08	+81°.53	+92°.0	+28°.0
Philadelphia	39 57	75 9	..	+53.38	+72.75	+29.77	+75.32	+87.0	−0.7
Penetanguishene	44 48	80 40	600	+45.28	+69.91	+22.68	+73.15	+92.0	−20.0
Cumberland House	53 57	102 17	800	+32.01	+67.80	−4.62	+69.80	+87.0	−44.0
Fort Chipewyan	58 43	111 18	500	+30.00	+62.41	+3.67	+63.42	+97.0	−31.0
Fort Enterprise	64 0	113 6	850	+14.19	+51.71	−23.03	+53.20	+78.0	−57.0
Fort Franklin	65 12	132 13	230	+17.50	+50.40	−16.81	+52.10	+80.0	−58.0
Winter Island	66 11	83 30	..	+6.84	+35.00	−24.96	+36.34	+54.0	−42.5
Igloolik	69 19	82 30	..	+2.20	+34.63	−26.76	+40.04	+50.0	−50.0
Melville Island	74 45	111 0	..	−1.71	+36.44	−33.02	+42.41	+60.0	−55.0

The nature of the country, whether prairie or wooded, rocky and barren, or marshy, must also be taken into account in all speculations on the distribution of the feathered tribes. Several of the *Grallatores*, for instance, that feed by thrusting their bills into soft marshy soil, frequent the Saskatchewan prairies only in spring, and as soon as the warm and comparatively early summer renders the soil dry and unfit to yield them support, they retire to their breeding-quarters in the Arctic lands. There, the frozen sub-soil acted upon by the rays of a sun constantly above the horizon, keeps the surface wet and spongy during the two short summer months which suffice these birds for rearing their young. This office performed, they depart to the southward, and halt in the autumn on the flat shores of Hudson's Bay, which, owing to accumulations of ice drifted into the Bay from the northward, are kept in a low temperature all the summer, and are not thawed to the same extent with the more interior Arctic lands before the beginning of autumn. They quit these haunts on the setting in of the September frosts, and passing along the coasts of the United States, retire within the Tropics in the winter.

Many species, which are purely summer visiters of the high latitudes, are resident within certain parallels of the United States, detachments advancing to the north in the spring for the purpose of rearing their young and retiring to the south of the resident stations in winter. It is obviously very difficult to ascertain whether the individuals of these species which breed in the higher latitudes are the same that retire farthest southwards in winter, those remaining in the intermediate districts in winter being the pairs which bred there, though from analogy we are led to think that such is the case. Of the strictly resident birds in Europe it is known that many (the House-Sparrow, for instance) shelter themselves in winter in their nests and summer haunts; and of the migratory ones, the same pair have been observed to build several successive seasons in the same spot. Some species seem to claim a right of property within a certain beat, chasing away with great pertinacity all the other birds that they can master. In the instance also of the *Falconidæ* and some other

tribes, which present a marked difference in the plumage of the old and young, we observe that the latter are expelled by their parents from the breeding-places, and appear both in summer and winter in districts which none of the old birds visit. From a consideration of these and similar facts, we are inclined to believe that, of the species which are found all the year within certain parallels, the younger individuals make the widest excursions in search of food or proper breeding places, and that, as their strength is matured by age, they fill up the casual vacancies which occur in the districts best adapted for their constant residence.

A number of species, which rear two or more broods within the United States, raise only one in the Fur-countries, the shortness of the summer not admitting of their doing more. The Passenger Pigeons do not visit the Fur-countries, where they breed, until after they have reared a brood, and quitted the breeding-places in Kentucky. It is probable that some other birds also breed in succession in different districts; and it is even possible that a few of the *Falconidæ* and some species of certain families of *Grallatores*, after spending the short summer of a high northern latitude in rearing one family, may gain a similar climate in the southern hemisphere for the purpose of rearing another brood, passing, of course, nearly one half of the year in the transit to and from these breeding-places *. This hint is thrown out as simply conjectural; but, in the families to which I allude, seldom more than two young are produced at a

* I have several times, when cruizing between Minorca and Sardinia, seen large flocks of Swallows, attended by great numbers of Hawks and a very small species of Owl, holding a direct course from the coast of Africa towards the Gulf of Lyons. From the direction of their flight, it did not appear that they could have rested on any part of the islands I have just mentioned; so that the traverse they attempted was full seven degrees of latitude. Both Swallows and birds of prey appeared much tired, and settled for several days on the masts and yards of all the ships of the fleet, from whence vast numbers were taken by the crews. Having no acquaintance whatever with Ornithology at the time, I do not know the species of the small Owl, but I have a distinct recollection of its being no bigger than a Sparrow; and in this I can scarcely be mistaken, as I kept one for nearly a week before it made its escape. It was fed on Swallows, which it invariably strangled by grasping them by the neck with one foot. If a bird of this size can cross such an expanse of sea at one flight, the greatness of the distance to be traversed, according to the supposition in the text, does not seem to be of itself a sufficient reason for rejecting the hypothesis, particularly if the length of time occupied in the passage and the long halts at the various resting-places be considered.

time, which would seem scarcely sufficient to supply the waste by the numerous casualties which occur, unless more than one brood were raised in the year. Captain King found several northern birds in the Straits of Magellan.

A large proportion of the migratory birds arrive in the higher latitudes in flocks, but disperse in pairs soon afterwards; and some, as the *Emberiza nivalis* and *Lapponica*, which winter within the limits of the Fur-countries, assemble during that season in large flocks, but separate when they reach their breeding-places. *Parus atricapillus* and *Linaria minor* live in small families in the winter only; the *Tetraonidæ* form coveys of ten or twelve in summer and the middle of winter, but make their spring and autumn movements to and from their breeding-places in great assemblages. The *Corvus corax* congregates only in the pairing season, in the beginning of March, when as many as fifteen or twenty may be seen together for a few days, until each has chosen a mate. Many of the *Sturnidæ*, the *Columba migratoria*, and *Pelecanus onocrotalus* fly in dense flocks all the summer. The *Hirundinidæ* and *Laridæ* breed in societies, and hunt for their food in numbers together; but they do not appear to move in concerted flights, like the birds we have last mentioned. The *Anatidæ*, again, feed together, but generally make their nests in remote and solitary spots.

The following Table requires no explanation. The fourth column is taken from the Prince of Musignano's work above alluded to (p. xvii.), and the fifth column is filled up on the authority of that naturalist, Wilson, Audubon, and some others. A partial analysis of this Table is given in the succeeding ones.

TABLE

No.	Species, numbered as in the Fauna.	Lat. N.	Extreme northern range. Distribution in the Fur-countries. Whether resident or migratory.
	VULTURIDÆ, p. 1.		
1	Sarcoramphus Californianus	49°	West of Rocky Mountains — *migr.*
2	Cathartes aura	54	Plains of Saskatch. and Columbia — *migr.*
3	„ atratus	48	West of Rocky Mountains — *migr.*
	FALCONIDÆ, p. 8.		
4	Aquila chrysaëta	66	On and near Rocky Mountains — *migr.*
5	„ (Haliæëtus) leucocephala	62	Across the continent; common — *migr.*
6	„ (Pandion) haliæëta	60	East of Rocky Mountains — *migr.*
7	Falco peregrinus	74	Across the continent — *migr.*
8	„ Islandicus	74	East of Rocky Mountains — resid.
9	„ sparverius	56	Across the continent — *migr.*
10	„ columbarius	66 ?	East of Rocky Mountains — *migr.*
11	„ æsalon	54 ?	Ditto — *migr.*
12	Accipiter (Astur) palumbarius	68	Across the continent; common — resid.
13	„ „ Pennsylvanicus	49	Ditto rare — *migr.*
14	Buteo vulgaris	58	Ditto — *migr.*
15	„ borealis	55	Ditto — *migr.*
16	„ lagopus	68	East of Rocky Mountains — *migr.*
17	„ (Circus) cyaneus	68	Ditto (*Young* in high latitudes) — *migr.*
	STRIGIDÆ, p. 71.		
18	Strix otus	60	East of Rocky Mountains; interior — resid.
19	„ brachyota	67	Across the continent — *migr.*
20	„ cinerea	68	Ditto — resid.
21	„ nebulosa	53	James's Bay — ——
22	„ (Bubo) Virginiana	68	Across the continent; common — resid.
23	„ „ arctica	53	Saskatchewan plains — resid.
24	„ nyctea	75	Across the continent — resid.
25	„ funerea	68	Ditto common — resid.
26	„ Tengmalmi	60	East of Rocky Mountains; common — resid.
27	„ Acadica	50	New Caledonia — resid.
	LANIADÆ, p. 105.		
28	Lanius borealis	60	East of Rocky Mountains — partly resid.
29	„ excubitorides	54	Ditto — *migr.*
30	„ elegans		——
31	Tyrannus intrepidus	57	East of Rocky Mountains — *migr.*
32	„ borealis	53	Ditto — *migr.*
33	Tyrannula Saya	54	Ditto (Breeds on the Arkansas) *migr.*
34	„ pusilla	56	Ditto — *migr.*
35	„ Richardsonii	60	Interior districts ditto — *migr.*
	MERULIDÆ, p. 149.		
36	Cinclus Americanus	50	Rocky Mountains; common — *migr.*
37	Merula migratoria	67	Across the continent — *migr.*
38	„ minor	54	East of Rocky Mountains — *migr.*
39	„ Wilsonii	55	Ditto — *migr.*
40	„ solitaria	50	Ditto — *migr.*

I.

Species observed on the Saskatchewan, lat. 53° to 54° N., and from 600 to 1000 miles distant from the sea-coast.	Species that frequent the vicinity of Philadelphia, lat. 40° N. (Bonsparte.)	Winter-quarters of the Species.	Page of the Fauna.
No.			
1 . . .	. . . . .	California . . .	1
2 In Summer only. Scarce	In Summer. Comm. .	Southern States, South Amer.	4
3	Ditto Accidental visiter .	Ditto? ditto	6
4 Summer. Rare; accid. .	Very rare; accid. visiter .	. . . .	12
5 Ditto Common .	*Resident.* Comm. . .	Southern States . .	15
6 Ditto Rare .	Summer. do. . .	Towards the Tropics .	20
7 Spr. and Aut. *Of passage*	Winter. Accid. visiter .	Louisiana . .	23
8 . . .	. . . . .	North of 54° . .	27
9 Summer. Common	*Resid.* Comm. . .	West Indies, Mexico, S. Calif.	31
10 Ditto Rare .	*Pass.* Spr. and Aut. Not uncom.	Mexico . . .	35
11 Ditto (Breeds.) Not com.	. . . . .	. . . .	37
12 *All the year.* Freq. in Sum.	Rare . . .	Fur-countries, North. States	39
13	Comm. . . .	California, South. States .	44
14 Summer. Not comm. .	. . . .	South California .	47
15 Ditto Comm. .	*Resid.* Very comm. . .	United States, Mexico, Calif.	50
16 Ditto do. .	Winter. Comm. . .	Middle States . .	52
17 Ditto Very comm.	Do. Yng. very com. (Old accid.)	South. States . .	55
18 *All the year.* Comm.	*Resid.* Comm. . .	. . . .	72
19 Summer. Very comm. .	Winter. Very comm. . .	Mid. and South. States, Calif.	75
20 *All the year.* Comm.	. . . .	Fur-countries . .	77
21 Not seen by us . .	*Resid.* Comm. . .	. . . .	81
22 *All the year.* Comm.	Do. Rare . .	Fur-countries, Unit. St., Calif.	82
23 Ditto Very rare	. . . . .	Ditto . .	86
24 Winter. Accid. .	Winter. Accid. . .	Between 67° and 55° .	88
25 *All the year.* Comm. .	Do. do. . .	Fur-countries to Middle States	92
26 Ditto do.	. . . .	Ditto Canada .	94
27 Not seen by us . .	Winter. Very rare . .	New Caledonia, North. States	97
28 *All the year.* Com. in Sum.	Winter. Rare . .	Fur-countr., Canada, Mid. St.	111
29 Summer. Comm. .	. . . . .	. . . .	115
30 . . .	. . . . .	. . . .	122
31 Summer. Comm. .	Summer. Very comm. .	Towards the Tropics .	137
32 Ditto One specim.	. . . . .	. . . .	141
33 Ditto do. .	. . . . .	. . . .	142
34 Spring. *Of passage*	. . . . .	. . . .	144
35 Do. *Of passage?* .	. . . . .	. . . .	146
36 . . .	. . . . .	Mexico . . .	173
37 Summer. Very comm. .	Winter. Very comm.; a few *res.*	Midd. and South. States, Calif.	176
38 Summer? Breeds?	. . . .	South. States . .	179
39 Ditto . .	Summer. Not rare . .	Ditto . . .	182
40 . . .	Ditto Comm. . .	Ditto . .	184

TABLE

Species, numbered as in the Fauna.		Extreme northern range. Distribution in the Fur-countries. Whether resident or migratory.	
No.	MERULIDÆ, *continued.*	Lat. N.	
41	Orpheus meruloides	66°	Great Bear Lake and North-west coast . *migr.*
42	„ rufus	54	East of Rocky Mountains . *migr.*
43	„ felivox	54	Ditto . *migr.*
	SYLVIADÆ, p. 200.		
44	Erythaca (Sialia) arctica	65	East of Rocky Mountains . *migr.*
45	„ „ Wilsonii	48	Ditto . *migr.*
46	Sylvicola æstiva	68	Across the continent . *migr.*
47	„ maculosa	55	East of Rocky Mountains . *migr.*
48	„ petechia	55	Ditto . *migr.*
49	„ coronata	56	Across the continent . *migr.*
50	„ striata	54	East of Rocky Mountains . *migr.*
51	„ (Vermivora) rubricapilla	55	Ditto . *migr.*
52	„ „ peregrina	55	Ditto . *migr.*
53	Setophaga ruticilla	58	Ditto . *migr.*
54	„ Bonapartii	55	Ditto . *migr.*
55	Parus atricapillus	65	Across the continent . resid.
56	Seiurus aurocapillus	55	East of Rocky Mountains . *migr.*
57	„ aquaticus	60?	Ditto . *migr.*
58	Anthus aquaticus	60?	Prairie district . *migr.*
	AMPELIDÆ, p. 232.		
59	Vireo olivaceus	55	East of Rocky Mountains . *migr.*
60	„ Bartramii	49	West of ditto . *migr.*
61	Bombycilla garrula	67	Rocky Mountains and Great Bear Lake . *migr.*
62	„ Americana	56	Middle Prairie districts . *migr.*
	FRINGILLIDÆ, p. 241		
63	Alauda calandra	58	Hudson's Bay . *migr.*
64	„ cornuta	69	East of Rocky Mountains; in flocks . *migr.*
65	Emberiza (Plectrophanes) nivalis	75	Arctic coasts, in summer . —
66	„ „ Lapponica	70	Ditto . *migr.*
67	„ „ picta	54	. *migr.*
68	„ pallida	55	East of Rocky Mountains . *migr.*
69	„ Canadensis	60	Across the continent . *migr.*
70	Fringilla (Zonotrichia) graminea	57	Prairies E. of Rocky Mountains . *migr.*
71	„ „ leucophrys	68	East of Rocky Mountains; common . *migr.*
72	„ „ Pennsylvanica	66	Ditto ditto . *migr.*
73	„ „ iliaca	68	Ditto . *migr.*
74	„ hyemalis	57	Middle Prairie district . *migr.*
75	Pyrgita (Pipilo) arctica	55	Saskatchewan prairies . *migr.*
76	Pyrrhula (Corythus) enucleator	60	East of Rocky Mountains; scarce . resid.
77	Loxia leucoptera	68	Across the continent . resid.
78	Fringilla purpurea	55	Ditto not common . *migr.*
79	Linaria (Leucosticte) tephrocotis	54	East of Rocky Mountains . —
80	„ minor	68	Across the continent . resid.
81	Carduelis Americana	60	Ditto . *migr.*

I. (*continued.*)

Species observed on the Saskatchewan, lat. 53° to 54° N., and from 600 to 1000 miles distant from sea-coast.	Species that frequent the vicinity of Philadelphia, lat. 40° N. (Bonaparte.)	Winter-quarters of the Species.	Page of the Fauna.
No.			
41	. . . . .	California . . .	187
42 Summer . .	All the Summer. Comm. .	South. States . .	189
43 Ditto . . .	Ditto. do. .	Florida, New Orleans .	192
44	. . . . .	. . . .	209
45	All the Summer. Comm. .	South. States . .	210
46 Summer. Very common	Ditto. do. .	Towards the Tropics .	211
47 Ditto. Comm. .	*Pass.* Spr. and Aut. Rare	Ditto ? .	213
48 Ditto. Not comm.	Summer. Extremely rare .	South. States . .	215
49 Ditto. Not uncomm. .	*Pass.* Spr. and Aut. Very com.	Ditto, Calif. . .	216
50 Ditto. . .	Do. Ditto. Not very rare	Ditto ? or towards the Tropics ?	218
51 Ditto. . . .	Do. Spring. Very rare .	Ditto ? ditto ?	220
52 Ditto. . .	. . . . .	Towards the Tropics .	221
53 Ditto. Very comm. .	Summer. Comm. . .	West Indies . .	223
54 Ditto. . .	*Pass.* Spr. and Aut. Not comm.	Towards the Tropics ? .	225
55 *All the year.* Very comm.	All the year. Very comm. .	Fur-countries, United States .	226
56 Summer. Not uncomm.	Summer. Comm. . .	Mexico, West Indies .	227
57 Spring. *Of passage* . .	*Pass.* Spr. and Aut. Rather rare	Ditto . . .	229
58 Ditto. do. ? flocks	Winter. Not rare . .	Middle and South. States	231
59 Summer . .	Spr., Summ., and Aut. Comm.	South. St. ? Towards Tropics ?	233
60	. . . . .	California ? . .	235
61 Spr. and Aut. *Of passage*	. . . . .	Mexico ? or farther south ? .	237
62 Summer . . .	Summer. In flocks. Comm.	South. St., Mexico, Cayenne	239
63 . . .	. . . . .	. . . .	244
64 Spring. *Of passage* .	Winter. Very comm. .	. . . .	245
65 Early in Spr., late in Aut. *Do.*	Do. Rare . . .	South of 54° middle of Winter	246
66 Spr. and Aut. *Ditto* .	. . . .	Do. 50° ditto	248
67 Ditto. do. .	. . . . .	. . . .	250
68 Summer. Comm. .	. . . .	. . . .	251
69 Spr. and Aut. *Of passage* .	Winter. Comm. . .	United States, Calif. .	252
70 Summer. Comm. .	*Resid.* do. . .	Middle and South. States .	254
71 Ditto. do. . .	Winter. Very rare . .	North. States . .	255
72 Ditto. do. .	*Resid.* Comm. . .	Middle and South. States .	256
73 Ditto. Arrive in flocks .	Winter. do. . . .	Ditto ditto .	257
74 Ditto. Rare .	Do. Extremely comm. .	Ditto ditto S. Calif.	259
75 Ditto. Not rare .	. . . . .	. . . .	260
76 *All the year.* Scarce .	Winter. Accid. visiter. .	Fur-countries, United States .	262
77 Ditto. . .	Do. Rare . . .	Ditto North. States	263
78 Summer. Not comm.	Do. Not very rare .	South. States . .	264
79 One specimen . .	. . . . .	. . . .	265
80 *All the year.* Abund.	In large flocks, at uncert. periods	Fur-countries, Canada .	267
81 Summer. Comm. .	Almost *resid.* Very comm. .	Mexico . . .	268

TABLE

Species, numbered as in the Fauna.	Extreme northern range. Distribution in the Fur-countries. Whether resident or migratory.	
No. FRINGILLIDÆ, *continued.*	Lat. N.	
82 Coccothraustes vespertina	56°	Prairies E. of Rocky Mountains — *migr.*
83 ,, (Guiraca) Ludoviciana	55	Ditto ditto — *migr.*
84 Pyranga rubra	49	Ditto ditto — *migr.*
STURNIDÆ, p. 275.		
85 Molothrus pecoris	56	East of Rocky Mountains — *migr.*
86 Dolichonyx oryzivorus	54	Ditto — *migr.*
87 Agelaius phœniceus	57	Across the continent — *migr.*
88 ,, xanthocephalus	58	East of Rocky Mountains — *migr.*
89 Sturnella Ludoviciana	56	Across the continent in prairies — *migr.*
90 Icterus Baltimore	55	East of Rocky Mountains — *migr.*
91 Quiscalus versicolor	57	Ditto in large flocks — *migr.*
92 Scolephagus ferrugineus	68	Ditto generally spread — *migr.*
CORVIDÆ, p. 288.		
93 Corvus corax	75	Across the continent; common — resid.
94 ,, corone	55	East of Rocky Mountains; in flocks — *migr.*
95 ,, pica	58	Interior districts both sides of Rocky Mountains — resid.
96 Garrulus cristatus	56	East of Rocky Mountains; common — *migr.*
97 ,, Stelleri	56	W. of Rocky Mountains & Saskatchewan plains — *migr.*
98 ,, Canadensis	65	Across the continent — resid.
99 ,, brachyrhynchus	68	North of Great Slave Lake — resid.
PICIDÆ, p. 298.		
100 Picus (Dryotomus) pileatus	63	Across the continent — resid.
101 ,, (Dendrocopus) villosus	63	Ditto — resid.
102 ,, ,, pubescens	58	Ditto — resid.
103 ,, ,, varius	61	East of Rocky Mountains — *migr.*
104 ,, (Apternus) tridactylus	68	Rocky Mountains and East districts — resid.
105 ,, ,, arcticus	56	Ditto — resid.
106 Colaptes auratus	61	East of Rocky Mountains — *migr.*
107 ,, Mexicanus	49	West of ditto — *migr.*
108 Melanerpes erythrocephalus	50	Prairies East and West of ditto — *migr.*
CERTHIADÆ, p. 316.		
109 Troglodytes ædon	57	East of Rocky Mountains; rare — *migr.*
110 ,, hyemalis	50	Ditto do. — *migr.*
111 ,, palustris	55	Ditto do. — *migr.*
TROCHILIDÆ, p. 321.		
112 Trochilus colubris	57	East of Rocky Mountains; rare — *migr.*
113 ,, (Selasphorus) rufus	61	West of ditto — *migr.*
HIRUNDINIDÆ, p. 326.		
114 Hirundo bicolor	60	East of Rocky Mountains — *migr.*
115 ,, Americana	68	Ditto — *migr.*
116 ,, lunifrons	67	Ditto — *migr.*
117 ,, riparia	68	Ditto — *migr.*
118 ,, purpurea	67	Ditto — *migr.*
Cypselus pelasgius*	49	Ditto — *migr.*

* We did not observe this species, and it is not noticed in the text; but Mr. Say observed it at

I. *continued.*

No.	Species observed on the Saskatchewan, lat. 53° to 54° N., and from 600 to 1000 miles distant from the sea-coast.	Species that frequent the vicinity of Philadelphia, lat. 40° N. (Bonaparte.)	Winter-quarters of the Species.	Page of the Fauna.
82	Late in Summ. Not com.	. . . . .	. . . .	269
83	Summer. Rare . .	Winter. Accid. visiter .	North., Mid., and West. States	271
84	. . .	Summer. Not very rare .	Gulf of Mexico? .	273
85	Summer. Not uncom. .	Summer. In flocks; common	Southern States, Mexico .	277
86	Ditto. Comm. .	*Pass.* In large flocks. Spr. & Aut.	Table-land of Mexico (Sw.)	278
87	Ditto. In large flocks .	Summer. In flocks .	Southern States, Mexico, Calif.	280
88	Ditto. ditto	. . . . .	Mexico, South America? .	281
89	Ditto. Comm. .	*Resid.* Very comm. .	Mid. and South. States, Calif.	282
90	Ditto. do. .	Summer. Comm. . .	Within the Tropics? .	284
91	Ditto. In flocks .	Ditto. In flocks .	Florida, Louis., Mexico .	285
92	Ditto. In pairs .	Ditto. do. . .	South. States . .	286
93	All the year. Comm. .	*Resid.* Rare . .	*Resid.* Fur-countries & U. S.	290
94	Summer. In flocks .	Do. Very comm. . .	United States . .	291
95	All the year. Freq. in Sum.	. . . .	Missouri, Fur-c., Columbia R.	293
96	Summer. Comm. .	*Resid.* Comm. . .	Middle and South. States .	293
97	Ditto. do. .	. . . .	North Calif. . .	294
98	All the year. do. .	. . . . .	*Resid.* Fur-countries, Canada	295
99	. . . .	. . . .	Do. North of Fur-countries	296
100	All the year. Rare .	*Resid.* Rare . .	*Resid.* Fur-c., U. S., Mexico .	304
101	Ditto. Comm. .	Do. Comm. . .	Do. do. do. do. Calif.	305
102	Ditto. do. .	Do. Very comm. . .	Do. do. do. .	307
103	Summer. Arr. in flocks .	Do. Comm. . .	United States . .	309
104	All the year. Comm.	. . . . .	Fur-countries . .	311
105	. . . .	. . . .	Ditto . . .	313
106	Summer. Comm. on plains	*Resid.* Very comm. . .	United States . .	314
107	. . . .	. . . .	Mexico, Calif. . .	315
108	. . .	*Resid.* Comm. . .	South. States . .	316
109	Summer. Rare . .	Summer. Comm. . .	West Indies? . .	316
110	. . .	Winter. do. . .	Middle and South. States	318
111	Summer. Rare .	Summer. do. . .	Florida, Louisiana . .	319
112	Summer. Rare .	Summer. Comm. . .	Mexico . . .	323
113	. . . .	. . . .	Table-land of Mexico .	324
114	Summer. Comm. .	Summer. Comm. . .	Louisiana . .	328
115	Ditto. do. .	Ditto. Very comm. .	Visits the Trops. mid. of Wint.	329
116	. . .	. . . . .	. . . .	331
117	Summer. Comm. .	Summer. Comm. . .	Not in United States .	333
118	Ditto. do. .	Ditto. Very comm. .	South America, Brazil (Sw.)	335
	. . . .	Ditto. do. . .	. . . .	

Pembina, on the Red River, on the boundary-line between the American and British Fur-countries.

TABLE

Species, numbered as in the Fauna.	Extreme northern range. Distribution in the Fur-countries. Whether resident or migratory.
No. CAPRIMULGIDÆ, p. 336.	Lat. N.
119 Caprimulgus vociferus	48° East of Rocky Mountains *migr.*
120 „ (Chordeiles) Virginianus	68 Ditto common *migr.*
HALCYONIDÆ, p. 339.	
121 Alcedo alcyon	67 Across the continent *migr.*
TETRAONIDÆ, p. 341.	
122 Tetrao umbellus	56 East of Rocky Mountains resid.
123 „ obscurus	64 Rocky Mountains, 64° to 40° resid.
124 „ Canadensis	68 East of Rocky Mountains resid.
125 „ Franklinii	58 Rocky Mountains resid.
126 „ (Lagopus) mutus	70? Baffin's Bay ——
127 „ „ saliceti	70 Across the continent ——
128 „ „ rupestris	75 Ditto ——
129 „ „ leucurus	64 Rocky Mountains, 64° to 54° resid.
130 „ (Centrocercus) urophasianus	48 West of Rocky Mountains resid.
131 „ „ phasianellus	61 Across the continent resid.
COLUMBIDÆ, p. 363.	
132 Columba migratoria.	62 Across the continent *migr.*
GRALLATORES, p. 366.	
133 Calidris arenaria	60 Hudson's Bay *migr.*
134 Charadrius semipalmatus	70 Across the continent *migr.*
135 „ vociferus	56 Ditto *migr.*
136 „ pluvialis	75 Ditto common *migr.*
137 Vanellus melanogaster	70 Ditto *migr.*
138 Strepsilas interpres	75 Hudson's Bay, Arctic Coasts, & Behring's Straits *migr.*
139 Grus Americana	68 East of Rocky Mountains *migr.*
140 „ Canadensis	68 Ditto *migr.*
141 Ardea Herodias	50 Red River plains *migr.*
142 „ lentiginosa	58 East of Rocky Mountains *migr.*
143 Recurvirostra Americana	55 Interior Prairie district *migr.*
144 Numenius longirostris	52 Across the continent *migr.*
145 „ Hudsonicus	60 Ditto *migr.*
146 „ borealis	70 Ditto *migr.*
147 Tringa Douglasii	60 East of Rocky Mountains *migr.*
148 „ himantopus	58 Ditto *migr.*
149 „ semipalmata	60 Ditto *migr.*
150 „ maritima	74 Ditto common *migr.*
151 „ alpina	75 Ditto do. *migr.*
152 „ Schinzii	55 Ditto interior prairies *migr.*
153 „ minuta	60 Ditto common *migr.*
154 „ pusilla	68 Ditto do. *migr.*
155 „ cinerea	75 Ditto do. *migr.*
156 Totanus semipalmatus	56 Ditto interior prairies *migr.*
157 „ vociferus	60 Ditto common *migr.*
158 „ flavipes	70 Ditto do. *migr.*

I. *continued.*

Species observed on the Saskatchewan, lat. 53° to 54° N., and from 600 to 1000 miles distant from the sea-coast.	Species that frequent the vicinity of Philadelphia, lat. 40° N. (Bonaparte.)	Winter-quarters of the Species.	Page of the Fauna.
No.			
19	Summer. Not rare . .	Not in United States .	336
20 Summer. Comm. .	Ditto Very comm. .	Ditto . .	337
21 Summer. Comm. .	Summer. Very comm. .	S. St., Mex., Calif., with. Trops.	339
22 All the year. Very comm.	Winter. Comm. . .	From lat. 56° to Gulf of Mex.	342
23 Ditto Comm. .	. . . . .	Rocky Mountains .	344
24 Ditto do. .	. . . . .	Fur-countries, North. States .	346
25 Ditto do. .	. . . . .	Rocky Mountains .	348
26 . . .	. . . . .	—— ? . . .	350
27 Winter only. *Migr.* .	. . . . .	Fur-c., betw. 66° & 50°, woods	351
28 . . .	. . . . .	Do. betw. 68° & 55°, do.	354
29	. . . . .	Rocky Mountains . .	356
30 . . .	. . . . .	California, Columbia River	358
31 All the year. Very comm.	. . . . .	Fur-countries, North-west St.	361
32 Summer. In small flocks	Summer. Exceedingly numerous	Kentucky, South. States .	363
33	Sea beaches. Comm. .	United States . .	366
34 *Pass.* Spring .	*Pass.* Spr. and Aut. Comm. .	South. States ? South Calif. .	367
35 Summer. Comm. .	Nearly *resid.* Very comm. .	United States, Calif. .	368
36 *Pass.* Spr. & Aut. Comm.	Winter. Not very rare . .	S. St., within the Tropics .	369
37 Summer. Rare .	Most num. in Wint. Very comm.	South. and Mid. States .	370
38	*Pass.* Spr. and Aut. Somewt. rare	S. St., or within the Tropics ?	371
39 Summer. Comm. .	Accid. visiter . .	Do. ? or towards the Tropics	372
40 Ditto do. .	. . . . .	Do. Mexico . .	373
41 . . .	Summer. Comm. . .	Mid. and South. States .	373
42 Summer. Comm. .	Ditto Not rare . .	South. States . .	374
43 Ditto Very com. on plns.	Accid. visiter . .	Within the Tropics . .	375
44 . . .	*Pass.* Spr. and Aut. Comm. .	South. States ? Towards Trops.	376
45 *Pass.* Spring . .	Do. do. do.	Ditto, or farther south .	377
46 Do. do. .	Accid. visiter . .	Within the Tropics, Brazil	378
47 Summer. Not comm. .	. . . . .	. . . .	379
48 . . .	*Pass.* Autumn. Rare .	Towards the Tropics ? .	380
49	Do. Spr. and Aut. Comm. .	. . . .	381
50 *Pass.* Spring .	. . . .	. . . .	382
51 Do. do. . .	*Pass.* Spr. and Aut. Comm. .	South. States . .	383
52 Summer. Comm. .	Do. Aut. Somewhat rare	Ditto . .	384
53	Do. do. Rare . .	. . . .	385
54 *Pass.* Spring. Comm.	Do. Spr. and Aut. Comm. .	S. St., and within the Tropics	386
55 . . .	Do. do. Somew. rare	. . . .	387
56 Summer. Comm. .	Do. do. Comm. .	South. St., within the Trops. ?	388
57 Ditto do. .	Summer. Comm. . .	Ditto ditto	389
58 Ditto do. .	Ditto do. . .	Ditto ditto	390

TABLE

Species, numbered as in the Fauna.		Extreme northern range. Distribution in the Fur-countries. Whether resident or migratory.	
No.	GRALLATORES, *continued.*	Lat. N.	
159	Totanus calidris	58°	Hudson's Bay *migr.*
160	,, Bartramius	55	East of Rocky Mountains *migr.*
161	,, ochropus	58	Hudson's Bay *migr.*
162	,, chloropygius	68	East of Rocky Mountains *migr.*
163	Limosa fedoa	68	Ditto common *migr.*
164	,, Hudsonica	68	Ditto *migr.*
165	Scolopax Novoboracensis	70	Ditto *migr.*
166	,, Drummondii	65	Rocky Mountains and Eastern districts *migr.*
167	,, Wilsonii	55	Hudson's Bay *migr.*
168	Rallus Novoboracensis	57	Ditto *migr.*
169	,, Carolinus	62	East of Rocky Mountains *migr.*
170	Fulica Americana	55	Across the continent *migr.*
171	Phalaropus Wilsonii	55	East of Rocky Mountains *migr.*
172	,, hyperboreus	75	Ditto *migr.*
173	,, fulicarius	75	Across the continent *migr.*
	NATATORES, p. 410.		
174	Podiceps cristatus	68	East of Rocky Mountains *migr.*
175	,, rubricollis	68	Ditto *migr.*
176	,, cornutus	68	Ditto *migr.*
177	,, Carolinensis	62	Ditto *migr.*
178	Sterna hirundo	57	Ditto common *migr.*
179	,, arctica	75	Ditto do. *migr.*
180	,, nigra	60	Ditto very common *migr.*
181	Larus glaucus	75	Ditto common *migr.*
182	,, argentatoides	75	Ditto do. *migr.*
183	,, leucopterus	75	Ditto do. *migr.*
184	,, eburneus	75	Ditto local *migr.*
185	,, canus	71	Ditto do. *migr.*
186	,, zonorhynchus	56	Ditto do. *migr.*
187	,, brachyrhynchus	68	Ditto do. *migr.*
188	,, tridactylus	74	Across the continent *migr.*
189	,, Franklinii	56	East of Rocky Mountains *migr.*
190	,, Bonapartii	70	Ditto frequent *migr.*
191	,, minutus	65	Ditto rare *migr.*
192	,, Rossii	82	Melville Peninsula; rare *migr.*
193	,, Sabinii	74	Across the continent *migr.*
194	Lestris pomarina	75	Hudson's Bay, Arctic Seas *migr.*
195	,, parasitica	75	Arctic sea-coasts and Hudson's Bay, &c. *migr.*
196	,, Richardsonii	67	Barren districts; common *migr.*
	ANATIDÆ, p. 435.		
197	Anas clypeata	70	Across the continent; numerous *migr.*
198	,, (Chauliodus) strepera	68	East of Rocky Mountains *migr.*
199	,, (Dafila) caudacuta	70	Ditto very common *migr.*
200	,, (Boschas) domestica	68	Across the continent *migr.*

I. *continued.*

Species observed on the Saskatchewan, lat. 53° to 54° N., and from 600 to 1000 miles distant from the sea-coast.	Species that frequent the vicinity of Philadelphia, lat. 40° N. (Bonaparte.)	Winter-quarters of the Species.	Page of the Fauna.
No.			
59	. . . . .	. . . . .	
60 Summer. Com. on plains	Summer. Somewhat rare	Southern States, S. America	391
61	. . . . .	. . . . .	
62 Summer. Comm.	*Pass.* Spr. & Aut. Somewhat rare	United States	393
63 Ditto Abundant	Winter . . ditto	South. St., or towards Tropics	395
64 *Pass.* Spr. and Aut.	Do. ? . ditto ?	. . . .	396
65 Summer. Comm.	*Pass.* Spr. and Aut. Comm.	South. St., or towards Tropics	
66 Ditto do.	. . . . .	. . . .	
167 . . .	Winter. Very comm.	South. States, S. America	401
168	Accid. visiter . .	Within the Tropics?	402
169 Summer. Abundant	Summer and Aut. Abundant	Ditto S. Amer.	403
170 Ditto Very comm.	*Pass.* Autumn. Comm.	South. States, Calif.	404
171 Ditto Not rare	Winter. Accid. visiter	Mexico, S. America	405
172 *Pass.* Spring. Rare	. . . . .	. . . .	406
173 Do. do. do.	Winter. Accid. visiter	United States, Calif.	407
174 Summer. Comm.	Winter. Accid. visiter . .	South. States . .	410
175 Ditto Not comm.	Do. ditto .	Ditto . . .	412
176 Ditto Very comm.	Do. Young rather comm.	Middle States . .	411
177 Ditto Rare	Do. Principally young	Ditto South States	412
178 Ditto Comm.	Summer. (Breeds.) Comm.	Towards the Tropics	412
179 *Pass.* Spring. Not com.	*Pass.* Autumn. Rather comm.	Middle and South States	414
180 Summer. Very comm.	Do. Comm., the young espec.	Ditto ditto	415
181	. . . . .	. . . .	
182	Comm. . . .	Middle and South. States	417
183	Winter. Not rare . .	Middle and North. States	418
184	. . . . .	Ditto ditto	419
185 *Pass.* Spr. and Aut. Com.	Comm. . . .	Ditto . . .	420
186 Summer. Abundant	. . . . .	. . . .	421
187 *Pass.* Spr. and Aut. Com.	. . . . .	. . . .	422
188 Summer. Comm.	. . . . .	United States . .	423
189 Ditto Abundant	. . . . .	. . . .	424
190 Ditto do.	. . . . .	. . . .	425
191 *Pass.* Spr. and Aut. Rare	. . . . .	United States . .	426
192	. . . . .	. . . .	427
193	. . . . .	South California . .	428
194	Winter. Accid. visiter	South. States . .	429
195 . . .	. . . . .	Middle States . .	430
196 *Pass.* Spr. and Aut. Rare	. . . . .	. . . .	
197 *Pass.* Spr. & Aut. Very c.	Winter. Rather comm.	United States, Mexico	439
198 Summer. Comm.	Do. Rare . . .	Mexican Lakes (Sw.)	440
199 Spr. and Aut. Not rare	Do. Comm. . .	Ditto	441
200 Summer. Comm.	Do. do. . .	M. & S. St., Columb. R., Calif.	442

TABLE

No.	Species, numbered as in the Fauna.	Lat. N.	Extreme northern range. Distribution in the Fur-countries. Whether resident or migratory.
	ANATIDÆ, *continued.*		
201	Anas (Boschas) crecca	70°	Across the continent; very abundant — *migr.*
202	,, ,, discors	58	Ditto — *migr.*
203	Mareca Americana	68	Ditto — *migr.*
204	Dendronessa sponsa	54	Ditto — *migr.*
205	Somateria spectabilis	75	On the east sea-coasts — ——
206	,, mollissima	75	Ditto — ——
207	Oidemia perspicillata	72	East of Rocky Mountains — *migr.*
208	,, fusca	72	Ditto — *migr.*
209	,, Americana	62	Hudson's Bay — *migr.*
210	Fuligula vallisneria	68	Across the continent — *migr.*
211	,, ferina	68	Ditto — *migr.*
212	,, marila	68	Ditto — *migr.*
213	,, rufitorques	68	East of Rocky Mountains — *migr.*
214	,, rubida	58	Ditto — *migr.*
215	Clangula vulgaris	68	Ditto — *migr.*
216	,, Barrovii	57	Rocky Mountains — *migr.*
217	,, albeola	68	Across the continent — *migr.*
218	,, histrionica	68	Ditto — *migr.*
219	Harelda glacialis	75	East of Rocky Mountains — *migr.*
220	Mergus merganser	68	Across the continent — *migr.*
221	,, serrator	68	Ditto — *migr.*
222	,, cucullatus	68	Ditto — *migr.*
223	Cygnus buccinator	68	Ditto — *migr.*
224	,, Bewickii	75	Ditto — *migr.*
225	Anser albifrons	73	East of Rocky Mountains — *migr.*
226	,, hyperboreus	73	Across the continent — *migr.*
227	,, Canadensis	70	Ditto — *migr.*
228	,, berniela	73	East of Rocky Mountains — *migr.*
229	,, Hutchinsii	69	Ditto — *migr.*
	NATATORES, *continued*, p. 472.		
230	Pelecanus onocrotalus	61	East of Rocky Mountains — *migr.*
231	,, (Carbo) dilophus	55	Ditto — *migr.*
232	Colymbus glacialis	70	Across the continent — *migr.*
233	,, arcticus	70	East of Rocky Mountains — *migr.*
234	,, septentrionalis	74	Across the continent — *migr.*
235	Uria troile	61	Arctic Sea and Hudson's Bay — ——
236	,, Brunnickii	75	Ditto ditto — ——
237	,, grylle	75	Ditto ditto — ——
238	,, alle	75	Ditto ditto — ——

I. *continued.*

No.	Species observed on the Saskatchewan, lat. 53° to 54° N., and from 60 to 1000 miles distant from the sea-coast.	Species that frequent the vicinity of Philadelphia, lat. 40° N., (Bonaparte.)	Winter-quarters of the Species.	Page of the Fauna.
201	Summer. Abundant .	Winter. Very comm. .	M. and S. St., towards Tropics	443
202	do. Comm. .	Summer. Comm. . .	Mexican St., Columb. R., Calif.	444
203	do. Rather comm.	Winter. do. . .	Middle and S. St., West Indies	445
204	do. Rare .	Summer. do. . .	S. States, Mexico? do.	446
205	. . . . .	. . . .	At sea, Coast of Labrador .	447
206	. . . .	Winter. Accid. visiter .	do. do. N. St.	448
207	*Pass.* Spr. & Aut. Not c.	do. Abund. . .	Canada, United States .	449
208	do. do. Com.	do. Rare . .	Middle States . .	450
209	. . .	. . . . .	. . . . .	450
210	Summer. Comm. .	Winter. Rather comm. .	Middle States, Columbia River	451
211	do. do. .	do. Very comm. . .	do. do.	452
212	do. do. .	„ „ .	do. do.	453
213	do. do. .	*Pass.* Spring. Not very rare .	South. States . .	454
214	do. Not uncomm.	Winter. Rather rare .	do. . . .	455
215	do. Very comm.	do. Frequent . .	Middle and South. States	456
216	. . . . .	. . . . .	. . . . .	456
217	Summer. Extremely com.	Winter. Very comm. .	United States, Mexico, Calif.	458
218	do. Very rare .	. . . . .	Middle and N. States, Canada	459
219	*Pass.* Spr. & Aut. Abund.	Winter. Very comm. .	United States . .	460
220	Summer. Comm. .	do. Not comm. . .	do. . .	461
221	do. do. .	do. Rare . .	South. States . .	462
222	do. do. .	. . . . .	do. . .	463
223	*Pass.* Spr. & Aut. In flocks	. . . .	Middle States . .	464
224	do. do. do.	. . . . .	Calif., a few on Columbia R.	465
225	do. do. V. abun.	Winter. Accid. visiter .	Mid. and S. St., „ .	466
226	do. do. do.	do. do. . .	United States . .	467
227	Summer. Comm. .	do. Com. . .	Middle States . .	468
228	*Pass.* Spr. & Aut. Accident.	do. do. . .	South. States .	469
229	do. do. In flocks	. . . . .	. . . . .	470
230	Summer. In flocks .	Accid. visiter . .	. . . . .	472
231	do. Not comm.	. . . . .	. . . .	473
232	do. Comm. .	Winter. Not rare . .	Middle States . . .	474
233	do. Rare .	. . . . .	. . . .	475
234	do. Not uncomm.	Winter. *Young* not rare .	United States . . .	476
235	. . . .	Accid. visiter . . .	Principally at sea in high lats.	477
236	. . .	do. . .	do. do.	477
237	. . . .	do. . . .	do. do.	478
238	. . .	Winter. Rather rare .	United States . .	479

Table II.

The following is a List of Birds which are found at all seasons of the year in some district or other of the Fur Countries.

Falconidæ. Falco islandicus, Accipiter (Astur) palumbarius.

Strigidæ. Strix otus, S. cinerea, S. nebulosa, S. (Bubo) Virginiana, S. (B.) arctica, S. nyctea, S. funerea, S. Tengmalmi, S. Acadica.

Laniadæ. Lanius borealis, L. excubitorides, L. elegans.

Sylviadæ. Parus atricapillus.

Fringillidæ. Emberiza (Plectrophanes) nivalis, E. (P.) Lapponica, Pyrrhula (Corythus) enucleator, Loxia leucoptera, Linaria minor.

Corvidæ. Corvus corax, C. pica, Garrulus Canadensis, G. brachyrhynchus.

Picidæ. Picus (Dryotomus) pileatus, P. (Dendrocopus) villosus, P. (D.) pubescens, P. (Apternius) tridactylus, P. (A.) arcticus.

Tetraonidæ. Tetrao umbellus, T. obscurus, T. Canadensis, T. Franklinii, T. (Lagopus) saliceti T. (L.) rupestris, T. (L.) leucurus, T. (Centrocercus) urophasianus, T. (C.) phasianellus.——In all 38.

As some of these, however, entirely quit their breeding stations in the winter and go southwards, they ought to be considered as migratory, although their range is comparatively limited. Thus the *Lagopi* quit the barren grounds, where they breed and seek shelter during winter in the more southerly wooded districts. The *Plectrophanes* breed on the Arctic coasts, and winter in the southern parts of the Fur Countries, migrating through eighteen or twenty degrees of latitude. Many of the *Strigidæ*, the *Laniadæ*, and *Picidæ*, retire from the sea-coast into the denser parts of the woods in winter, some individuals, however, remaining all the year in their breeding quarters. Numbers also of the *Parus atricapillus* and *Linaria minor* remain in the severest seasons in all parts of the Fur Countries; but in some winters, at uncertain intervals, they appear in large flocks within the territory of the United States. *Somateria mollissima* and *S. spectabilis*, and *Uria Brunnichii*, *U. troile*, and *U. grylle*, ought also to be reckoned among the birds that winter in high latitudes, as many remain all the winter wherever they can find open water, although they also visit the coasts of the United States in that season in smaller numbers.

Table III.

List of Species of which considerable numbers are resident all the year in the Fur Countries, *but of which detachments (mostly young birds?) visit the United States in winter.*

Falconidæ. Accipiter (Astur) palumbarius?

Strigidæ. Strix funerea, St. nyctea.

Laniadæ. Lanius borealis.

Fringillidæ. Emberiza (Plectrophanes) nivalis, E. (P.) Lapponica, Pyrrhula (Corythus) enucleator, Loxia leucoptera, Linaria minor (visits the United States in some winters only).

Corvidæ. Garrulus Canadensis. Corvus pica (Missouri in winter).

Anatidæ. Somateria mollissima.—This and the three following species keep the sea in the higher latitudes, a few individuals only resorting to the coasts of the United States.

Alcadæ. Uria troile, U. Brunnichii, U. grylle.——In all 15.

Table IV.

List of Species which are resident all the year *both in the* Fur Countries *and in* Pennsylvania.

Strigidæ. Strix otus, St. nebulosa? St. (Bubo) Virginiana.

Sylviadæ. Parus atricapillus.

Corvidæ. Corvus Corax.

Picidæ. Picus (Dryotomus) pileatus, P. (Dendrocopus) villosus, P. (D.) pubescens.——8.

Table V.

List of Species which are resident all the year *in* Pennsylvania, *and visit the* Fur Countries *in* summer only.

Falconidæ. Aquila (Haliæëtus) leucocephala, Falco sparverius, Accipiter Pennsylvanicus? Buteo borealis.

Merulidæ. Merula migratoria. Only a few summer in Pennsylvania.

Fringillidæ. Fringilla (Zonotrichia) graminea, F. (Z.) Pennsylvanica.

Sturnidæ. Sturnella Ludoviciana.

Corvidæ. Corvus corone, Garrulus cristatus.

Picidæ. Picus (Dendrocopus) varius, Colaptes auratus. Melanerpes erythrocephalus.

Grallatores. Charadrius vociferus (seen nearly the whole year near Philadelphia), Vanellus melanogaster.——In all 15.

Table VI.

List of Species which merely WINTER *in* PENNSYLVANIA, *and migrate in* SUMMER *to rear their young in the* FUR COUNTRIES.

FALCONIDÆ. Falco peregrinus, Buteo lagopus, Buteo (Circus) cyaneus (young only).

STRIGIDÆ. Strix brachyota.

MERULIDÆ. Merula migratoria. A few breed in Pennsylvania.

SYLVIADÆ. Anthus aquaticus.

FRINGILLIDÆ. Alauda cornuta, Emberiza Canadensis, Fringilla leucophrys, F. iliaca, F. hyemalis, F. purpurea, Coccothraustes Ludoviciana.

CERTHIADÆ. Troglodytes hyemalis.

GRALLATORES. Calidris arenaria, Charadrius vociferus, Ch. pluvialis, Vanellus melanogaster, (a few breed within the state,) Limosa fedoa, L. Hudsonica, Scolopax Wilsonii.

NATATORES. Podiceps cornutus, P. Carolinensis, Sterna arctica, St. nigra, Larus argentatoides, L. leucopterus, L. canus, Anas clypeata, A. (Chauliodus) strepera, A. (Dafila) caudacuta, A. (Boschas) domestica, A. (B.) crecca, Mareca Americana, Oidemia perspicillata, O. fusca, O. Americana, Fuligula vallisneria, F. ferina, F. marila, F. rubida, Clangula vulgaris, Cl. albeola, Harelda glacialis, Mergus merganser, M. serrator, Anser Canadensis, A. bernicla, Colymbus glacialis, C. septentrionalis, Uria alle.——In all 52.

Table VII.

List of Species which SUMMER (*or breed*) *in the* FUR COUNTRIES *and in* PENNSYLVANIA, *but* WINTER *farther to the* SOUTHWARD.

VULTURIDÆ. Cathartes aura.

FALCONIDÆ. Aquila (Pandion) haliæeta.

LANIADÆ. Tyrannus intrepidus.

MERULIDÆ. Merula Wilsonii, M. solitaria, Orpheus rufus, O. felivox.

SYLVIADÆ. Erythaca (Sialia) Wilsonii, Sylvicola æstiva, S. petechia, Setophaga ruticilla, Seïurus aurocapillus.

AMPELIDÆ. Vireo olivaceus, Bombycilla Americana.

FRINGILLIDÆ. Carduelis Americana (only a very short time absent from Pennsylvania), Pyranga rubra.

STURNIDÆ. Molothrus pecoris, Agelaius phœniceus, Icterus Baltimore, Quiscalus versicolor, Scolecophagus ferrugineus.

CERTHIADÆ. Troglodytes ædon, T. palustris.

TROCHILIDÆ. Trochilus colubris.

HIRUNDINIDÆ. Hirundo bicolor, H. Americana, H. riparia, H. purpurea, Cypselus pelasgius.

Caprimulgidæ. Caprimulgus vociferus, C. (chordeiles) Virginiana.

Halcyonidæ. Alcedo alcyon.

Columbidæ. Columba (Ectopistes) migratoria.

Grallatores. Ardea Herodias, A. lentiginosa, Totanus vociferus, T. flavipes, T. Bartramius, Rallus Carolinus.

Natatores. Sterna hirundo, Anas discors, Dendronessa sponsa.——In all 42.

Table VIII.

List of Species which winter *to the* southward, *are birds of* passage *in the parallel of* Philadelphia *in spring and autumn, and breed in* summer *in the* Fur Countries.

Falconidæ. Falco Columbarius.

Sylviadæ. Sylvicola maculosa, S. coronata, S. striata, S. (Vermivora) rubricapilla, S. (V.) peregrina? Setophaga Bonapartii, Seiurus aquaticus.

Ampelidæ. Bombycilla garrula.

Sturnidæ. Dolichonyx oryzivorus.

Grallatores. Charadrius semipalmatus, Strepsilas interpres, Grus Americana, G. Canadensis, Recurvirostra Americana, Numenius longirostris, N. Hudsonicus, N. borealis? Tringa Douglasii, Tr. himantopus, Tr. semipalmata, Tr. alpina, Tr. maritima? Tr. Schinzii, Tr. minuta, Tr. pusilla, Tr. cinerea, Totanus semipalmatus, T. chloropygius, Scolopax Novoboracensis, Rallus Novoboracensis, Fulica Americana, Phalaropus Wilsonii, Ph. hyperboreus.

Natatores. Fuligula rufitorques.——In all 35.

Note.—To illustrate the distribution of the Northern American birds still farther, the two following tables compiled from the Prince of Musignano's *Specchio comparativo*, &c., are subjoined.

No. I.—*List of the Species which migrate northwards, from or through Pennsylvania, in spring, and may therefore be considered as retiring to the Fur Countries to breed, although they did not come under our notice.*

Falconidæ. Falco Sancti Johannis, F. hyemalis.

Sylviadæ. Sylvia Novoboracensis, S. palmarum, S. maritima, S. pardalina, S. mitrata, S. pensilis, S. virens, S. Blackburniæ, S. icterocephala, S. castanea, S. Canadensis, S. autumnalis, S. sphagnosa, S. azurea, S. Wilsonii, S. vermivora, S. solitaria, S. chrysoptera, Parus bicolor, Regulus cristatus, R. calendula.

Fringillidæ. Fringilla pinus, Loxia curvirostra.

Grallatores. Tringa pectoralis.

Natatores. Rhincops nigra, Sterna minuta, Anas obscura, A. Labradora, Mergus albellus, Phalacrocorax carbo, Ph. graculus, Ph. cristatus, Mormon fratercula, Alca torda.——In all 36.

No. II.—*Species resident all the year in Pennsylvania, which were not seen by us in the Fur Countries.*

Strigidæ. Strix asio.

Sylviadæ. Sylvia trichas (absents itself a few days in the middle of winter).

Certhiadæ. Sitta Carolinensis.

Fringillidæ. Fringilla melodia, F. socialis, F. pusilla, F. caudacuta, F. maritima, F. Cardinalis.

Tetraonidæ. Perdix Virginiana.

Pavonidæ. Meleagris gallopavo (formerly, now extinct in that state).

Grallatores. Hæmatopus ostralegus.——In all 12.

Table IX.

List of Birds detected on the North Georgian Islands and adjoining Seas, lat. 73° to 75° N., on Sir Edward Parry's first Voyage.

Strigidæ. Strix nyctea.

Fringillidæ. Emberiza nivalis.

Corvidæ. Corvus corax.

Hirundinidæ. Species ignota.

Caprimulgidæ. Caprimulgus Americanus.

Tetraonidæ. Tetrao rupestris.

Grallatores. Calidris arenaria, Charadrius pluvialis, Ch. semipalmata, Strepsilas collaris, Tringa variabilis, Tr. cinerea, Tr. maritima, Numenius borealis? Phalaropus fulicarius.

Natatores. Sterna arctica, Larus glaucus, L. argentatus, L. leucopterus, L. eburneus, L. tridactylus, L. Sabinii, Lestris pomarinus, L. parasitica, Procellaria glacialis, Uria Brunnichii, U. grylle, U. alle, Colymbus septentrionalis.—(Anatidæ.) Anas cygnus, A. bernicla, A. spectabilis, A. mollissima, A. glacialis.——34 in all.

All these birds are *migratory,* arriving on Melville Island in May, and departing with their young broods in October. A sailor, who was walking in the month of February near the ships, saw what he described as a large white bird, flying near the ground. "If it were a bird," says Captain Sabine, "it was most probably a *Strix nyctea;* but neither this nor any other individual was observed before or afterwards, until the general arrival in May; and as scarcely a day passed afterwards in which birds of this species were not seen, it seems reasonable to conclude that this solitary and somewhat uncertain instance does not justify an exception to the above general remark." This table may be compared with the list of Greenland birds given below*.

* *List of Greenland Birds.*—(Captain Sabine.)

Falconidæ. Falco albicilla, F. islandicus, F. peregrinus, F. tinnunculus.

Strigidæ. Strix nyctea, St. asio.

Sylviadæ. Sylvia œnanthe, Parus bicolor.

Fringillidæ. Emberiza nivalis, Fringilla Lapponica, F. Linaria.

Corvidæ. Corvus corax.

Tetraonidæ. Tetrao lagopus.

Grallatores. Charadrius hiaticula, Ch. pluvialis, Ardea cinerea, Tringa cinerea, Tr. maritima, Tr. alpina, Tr. interpres, Scolopax gallinago, Sc. Lapponica, Phalaropus hyperboreus, Ph. platyrhynchus.

Natatores. Sterna hirundo, Larus marinus, L. glaucus, L. argentatus, L. eburneus, L. tridactylus, L. Sabinii, Lestris parasiticus, Procellaria glacialis, Pr. puffinus, Alca impennis, A. torda, A. arctica, A. alle, Uria Brunnichii, U. grylle, Colymbus glacialis, C. septentrionalis, Pelecanus carbo, P. graculus, P. Bassanus.—(Anatidæ.) Mergus merganser, M. serrator, Anas anser, A. bernicla, A. spectabilis, A. mollissima, A. boschas, A. clangula, A. hyemalis, A. histrionica.——In all 55 species.

Table X.

Comparative View of the number of Species in the neighbourhood of Philadelphia, on the Banks of the Saskatchewan, in the 64th parallel, in the Arctic Islands, and in the Fur Countries in general.

	Philad. Lat. 40°.	Saskatch. Lat. 54°.	In the 64th parallel.	Arctic Islands. Lat. 74°	Fur Countries in general.
Resident, and of course breeding .	44	24	16	0	40
Migratory, that summer or breed .	60	117	87	34	198
„ that winter only . .	71	1	0	0	0
„ that pass in spring or autumn	55	37	10	0	0
„ doubt if they breed or pass merely	0	8	0	0	0
Accidental visiters . .	51	2	0	0	0
	281	189	113	34	238

This summary shews, that the number of species which are known to rear their young on the banks of the Saskatchewan amount to 141, while there are only 104 species enumerated as breeding in the vicinity of Philadelphia, where ornithology has been so much more thoroughly investigated. It also appears that as great a variety of birds breed in the 64th parallel as in the 40th. The number of species that arrive from the north merely to winter in Pennsylvania exceeds those that come from the south to breed there; while the birds that simply pass on their way to the north nearly equal the latter. The resident birds diminish gradually as the latitude increases.

Table XI.

List of Species common to the Old World and to the Fur Countries.

Falconidæ. Aquila chrysaëta, A. (Haliæëtus) leucocephala, A. (Pandion) haliæëta, Falco peregrinus, F. islandicus, F. æsalon, Accipiter (Astur) palumbarius, Buteo vulgaris, B. lagopus, B. (Circus) cyaneus.

Strigidæ. Strix otus, St. brachyota, St. nebulosa, St. nyctea, St. funerea, St. Tengmalmi.

Sylviadæ. Parus atricapillus, Anthus aquaticus.

Ampelidæ. Bombycilla garrula.

Fringillidæ. Alauda calandra? A. cornuta, Emberiza (Plectrophanes) nivalis, E. (Pl.) Lapponica, Pyrrhula (Corythus) enucleator, Linaria minor.

Corvidæ. Corvus corax, C. corone, C. pica.

Picidæ. Picus (Apternius) tridactylus.

Hirundinidæ. Hirundo riparia.

Tetraonidæ. Tetrao (Lagopus) saliceti, T. (L.) rupestris.——32 land-birds.

Grallatores. Calidris arenaria, Charadrius pluvialis, Vanellus melanogaster, Strepsilas interpres, Tringa maritima, Tr. alpina, Tr. Schinzii, Tr. minuta, Tr. cinerea, Totanus semipalmatus, T. calidris, T. Bartramius, T. ochropus, T. macularius, Scolopax Novoboracensis, Phalaropus hyperboreus, Ph. fulicarius.

Natatores. Podiceps cristatus, P. rubricollis, P. cornutus, Sterna hirundo? St. arctica, St. nigra, Larus glaucus, L. argentatoides, L. leucopterus, L. eburneus, L. canus, L. tridactylus, L. minutus, L. Rossii, L. Sabinii, Lestris pomarina, L. parasitica.—(Anatidæ.) Anas clypeata, A. (Chauliodus) strepera, A. (Dafila) acuta, A. (Boschas) domestica, A. (B.) crecca, Somateria mollissima, S. spectabilis, Oidemia perspicillata, O. fusca, Fuligula ferina, F. marila, Clangula vulgaris, Harelda glacialis, Mergus merganser, M. serrator, Cygnus Bewickii, Anser bernicla, A. albifrons, A. hyperborea.—Colymbus glacialis, C. arcticus, C. septentrionalis, Uria Brunnickii, U. troile, U. grylle, U. alle, Mormon arctica, Alca torda, Procellariæ quædam?——Upwards of 62 water-birds.

The preceding tables have been constructed with the view of exhibiting the more remarkable facts connected with the distribution of the feathered tribes, which a residence in the Fur Countries enabled me to ascertain. Being acquainted, however, with the phenomena of that region only, and therefore qualified to take but a very partial view of the geographical distribution of animals, I have avoided offering any general remarks or conclusions, and beg to refer the reader to Mr. Swainson's essay in the Encyclopædia of Geography, now in the press. He has, I understand, treated the subject, particularly as relating to American birds, in much detail; and from his very extensive knowledge of Ornithology, and the philosophic nature of his views, he brings powers to the task which few possess.—R.

Melville Hospital, Chatham,
July, 1831.

INTRODUCTORY OBSERVATIONS

ON THE

NATURAL SYSTEM.

BY

WILLIAM SWAINSON, Esq.

In estimating the progress of zoological science during the last ten years, it seems essential to view the subject under two heads: firstly, as regards a knowledge of individual structure; and secondly, as regards the application of this knowledge to the illustration of general laws.

To expatiate on the extent of the discoveries, or on the value of the physiological facts which have been brought to light during this period, would be altogether superfluous. They are, indeed, so vast, and at the same time so diversified, that it is no longer in the power of an individual, absorbed in the study of a part, rightly to appreciate the full bearings of the whole. If, then, we are to measure the progress of this science by the accession of new objects, or by our increased knowledge of structure, its advance has been almost immeasurable.

Yet, while we may justly exult in these splendid accessions to our favourite science, we must still consider them but as materials for reaching "a higher state of knowledge:" that, in short, which was long ago pronounced by Linnæus to be the "*ultimus finis*" of the true Zoologist,—the discovery of the Natural System. However greatly the learned Swede may have erred in his efforts to attain this end; however different are the opinions upon record regarding his zoological system, and of all others that have supplanted it; and however inconsistent these latter appear with each other; still, among those whom

the general voice has most honoured and respected, there is but one opinion on this Linnean axiom. Nearly every writer, in fact, who now aims at distinction by investigating natural affinities, prosecutes this "grand, this ulterior object*;" and it has justly been pronounced that a correct knowledge of the natural system is the "*primum* and *ultimum* of true science†."

Now it is a fact no less remarkable than true, that while the importance of studying the general laws of creation becomes every day more apparent, and its necessity is more and more insisted upon, still that our knowledge of those laws during the last ten years has remained completely stationary. To show upon what foundation this assertion rests, it will be necessary to make a slight digression.

It was in the year 1819 that the attention of Zoologists was awakened by the appearance of the celebrated *Horæ Entomologicæ* of the younger Macleay; and this was followed, two years afterwards, by the erudite *Systema Mycologicum* of Elias Fries, one of the greatest Botanists of Germany. The authority of the *Systema Naturæ*, so far as regards natural arrangement, had already been severely shaken by the *Règne Animal* of the great Cuvier,—not to mention in Ornithology the writings of Le Vaillant. But the system of the great Swede was now to be annihilated.

Differing in their details, and each unconscious of the other's sentiments, it is no less extraordinary than interesting to trace the perfect agreement of these eminent men on two great and primary principles: first, that the natural series of affinities throughout all the grand divisions of Nature is circular; and secondly, that every minor division or group forms its own peculiar circle.

In estimating the value of these theories, it may be said that the first is assumed; since, until the whole of the animal or the vegetable kingdom has been analysed, the true course of affinity might be conjectured, but could not be demonstrated. It is, however, an assumption fully warranted by the second conclusion: this latter resting entirely upon analysis, and therefore capable, in such groups as have

* Annulosa Jav., Pref. xii.

† Kirby, Intr. to Entom., p. 4, 547.

been so analysed, of mathematical demonstration. It would be presumptuous in one, whose knowledge of Botany is very limited, to say how far Mr. Fries has succeeded in demonstrating his second proposition ; but I may venture to express an opinion that, in the genera *Phanæus* and *Scarabæus*, Mr. Macleay has established it most completely.

The promulgation of a theory so novel, and so calculated to destroy all received opinions on natural arrangement, gave rise, as might be expected, to much difference of sentiment, particularly among the Naturalists of Britain. Nearly all those whose writings had placed them in the foremost ranks, and who had long viewed the systems of the day as mere helps to the memory, admitted, either wholly or in part, the correctness of Mr. Macleay's views. Others, however, have rejected all such ideas on circular affinities or definite divisions ; but hitherto these objections have only been supported by partial or abstract reasoning.

Twelve years have now elapsed since the publication of the *Horæ Entomologicæ*. During this period, some of the most zealous disciples of its author have applied the theory of their master to various departments of Zoology, with different degrees of success. A great insight has thus been gained into several natural groups ; and, in many cases, their systems have made a much more correct approximation to what we see in Nature, than did those of their predecessors. But, without detracting from the just merit of these attempts, we must not be blind to the fact, that they exhibit nothing more than the mere application of a theory; without bringing to light, or without even attempting the discovery, of a single new principle in natural arrangement. The track which had been marked out in the *Horæ Entomologicæ* has in no one instance been intentionally deviated from ; and during this long period not the slightest discovery in the general laws of creation has been effected.

I have thus shown in what respect the philosophy of Zoology has remained stationary ; but it might even be said to have retrograded. One of the great characteristics, apparent in every page of the *Horæ*

Entomologicæ, is its tendency to raise Zoology to the rank of a demonstrative science. By proving that natural affinities were circular, it established at the same time the existence of definite groups; from which, of course, if any part was taken away, and placed in another group, a violation of natural affinities would inevitably follow, and both groups be rendered artificial. Now this principle, as it appears to me, has been either completely overlooked or essentially violated by the disciples of this school. They express their opinion that a genus, which seems allied to two different families, "may be placed in either, according to its external characters*;" and if these two families are in juxtaposition, "it is *immaterial* to which of them it may *eventually* be referred." Now, if an arrangement be artificial, that is, framed merely to assist the memory, this mode of proceeding would be very well; but if such a principle be admitted in the theory of Mr. Macleay, it completely destroys all his idea of definite groups, and leaves every one to describe their circles at their own good will and pleasure. Again; another most important definition, contained in the same volume, relates to the nature and value of those groups which are there denominated genera, and which are shown to contain certain types of form, termed sub-genera. It is, moreover, proved that every zoological genus thus characterized returns into itself, and forms a circle. It matters not whether this definition of a zoological genus agrees with that which has been given to the word by logicians; yet one of the most zealous disciples of Mr. Macleay has rejected his application of this word, which is definite, and has advocated another, confessedly founded upon metaphysical reasoning† and mere opinion‡.

It is owing to these and to similar misconceptions, which the disciples of Mr. Macleay have fallen into, that the theory itself has been of late so severely attacked, and has even lost some of its supporters. Certain, however, it is, that these inconsistencies are nowhere to be found in the writings of this distinguished master. He has repeatedly warned his disciples on the facility of making circles and quinary divisions, when unsupported by those tests which he has him-

* Vigors, Zool. Journ., i., p. 397. † Zool. Journ., iii., p. 97. ‡ Ibid., i., p. 341.

self applied to the only two groups he has thoroughly analysed; namely, *Scarabæus* and *Phanæus;* while, so far from presuming that he has discovered the natural system, he states upon every occasion, most prominently and distinctly, that we have as yet obtained but a glimpse of that system; while, at the same time, he has pointed out the only path by which, as he truly conceives, it can be further developed *.

It will be readily perceived, from the tenor of these observations, that my own researches have led to the adoption of the two great principles of natural arrangement already adverted to. I speak of the circular theory alone, since MM. Macleay and Fries differ in the number of their divisions; Mr. Macleay's being *five*, while Mr. Fries insists upon *four*†. Neither of these agree with the details now laid before the public. Fortunately, however, each party is desirous that his theory should be tried by one and the same test. We agree that no group, or division of a group, can be natural, if its affinities are not circular, or decidedly tending thereto: this must be the test of all. And here I may observe, that the opponents of Mr. Macleay have adopted a line of argument, which, in every other branch of science, is totally inadmissible. Instead of combatting his theory by general or abstract reasoning, or, what is even more inconclusive, by mere opinion, they should have either disproved the facts upon which it is founded, or have explained them in some other way, more calculated to show the harmonious combinations of Nature. If this had been done, the foundation would have been sapped, and the theoretical superstructure destroyed. But the singularity of the controversy has been this, that the facts have been suffered to remain unquestioned, while the inferences have been vehemently denied; denied, also, without an attempt to substitute others in their place. It seems to

* The only probability, I conceive, of our ever understanding the great scheme of the creation, *must depend on studying the method in which the organs and properties of natural beings vary.* All true knowledge of Natural History hinges on this,—"*Ordinis hæc virtus erit et venus.*"—Horæ Ent., p. 458.

† Mr. Macleay, with every appearance of reason, views this difference as rather nominal than real.—See Linn. Trans., xiv., p. 46.

have been forgotten by these gentlemen, that science is founded upon facts, and upon a cautious process of inductive and analogical reasoning drawn from those facts: it has nothing to do with speculative opinion or with metaphysical reasoning. The full knowledge of the Natural System, or of the plan which OMNIPOTENCE pursued in Creation, none but a madman or an enthusiast can ever hope to attain. But I have yet to learn why we are to withhold that title from a system which endeavours to reconcile all the appearances of Nature, and to explain some part of her laws. A natural system in Botany is advocated and adopted as such, without any one venturing to question the correctness of the epithet; but, in Zoology, it seems to be thought presumptuous to talk of the Natural System; because, as it is urged, that system, in all its bearings, can never be understood. As well may we call the Solar System an artificial arrangement of the heavenly bodies. As well may we maintain there are no natural laws in Chemistry, since all the properties of inorganic matter have not, nor ever will be, discovered. The structure and economy of an animal are as incontestable matters of fact as the presence of any substance in the mineral world, and both are equally legitimate instruments of reasoning. Until, therefore, we come to the determination of rejecting that which is known, from a consideration of that which is unknown, I must continue to esteem the *Horæ Entomologicæ* as the first and the most comprehensive developement of the Natural System that has been given to the world. The theory which it explains may be in parts defective, and in others erroneous, but it has been pronounced by a most distinguished Naturalist, who even suspects its entire accuracy, to be "*the most* consistent of any yet advanced, since it reconciles facts, *which, upon no other plan, can be reconciled**." Now, unless these facts are fully and clearly explained by some other theory, and new harmonies of creation brought to light, all the general reasoning or metaphysical disputation that can be urged against it has, in my estimation, nothing to do with the question at issue.

I have stated thus much, not from any desire to uphold such parts

* Kirby, Introd. to Entom., iv., p. 359.

of the Horæ Entomologicæ as are the result of synthetical investigation, still less to maintain the theory of quinary divisions, which I now venture, in part, to dispute, but to express my deep sense of the profound sagacity of that mind which first demonstrated the existence of circular affinities, and first drew a just and philosophic distinction between analogy and affinity. I have done this, because it seems to me that the reputation of this naturalist, like that of Linnæus, has suffered more from the zeal of his disciples than from the arguments of his opponents, and because I must ever feel grateful to one whose philosophic deductions first drew my attention to these inquiries. As for the rest, "we may all possibly be wrong in part, or even in much of our respective details; but however this may be, it is difficult not to believe that we are grasping at some great truth, which a short lapse of time will perhaps develope in all its beauty, and at length place in the possession of every observer of nature *."

Convinced that a zoological system which aimed at illustrating the general laws of creation was that only which deserved to be called *Natural*, it was in the year 1824 that I endeavoured to apply the circular and quinarian theory to a family group in Ornithology †, determined on ascertaining how far it would illustrate certain affinities and analogies, which to me, at least, appeared unquestionable. I soon found, however, that although this theory would explain much that I desired, it would not explain *all;* and the publication of a quinarian arrangement of this same family, nearly at the same time, but essentially different from my own ‡, showed me the necessity of looking much deeper into the subject. Convinced that truth, if it was to be discovered, would only result from minute and patient analysis, I entirely abandoned the synthetic method, as the rock upon which others were splitting; while the mutual dependence of one natural group upon another, led almost insensibly from the analysis of the *Laniadæ*, to that of the vast order of INSESSORES §, or perching birds. Eight years have

* Macleay, Linn. Trans., xiv., p. 63.

† An Inquiry into the Natural Affinities of the Laniadæ, Zool. Journ., i., p. 289, Oct. 1824.

‡ Linn. Trans., xiv., p. 436.

§ I have adopted this name, because, upon the whole, it is the most expressive of any yet given to

now been devoted, almost unceasingly, to this investigation; and although I have found it impossible in every instance to enter into details, I now venture to lay the results before the world, considering that a more appropriate channel for such communication could not be chosen than this: being the *first zoological work* ever published under the immediate authority of the British Government.

The object of the introductory observations to each family of the order INSESSORES, is to demonstrate the following peculiarities in natural arrangement. These I shall briefly state as propositions.

1. *Every natural series of beings, in its progress from a given point, either actually returns, or evinces a tendency to return, again to that point, thereby forming a Circle.*
2. *The contents of such a Circle or Group are symbolically represented by the contents of* all *other Circles in the same class of animals; this resemblance being strong or remote, in proportion to the proximity or the distance of the groups compared.*
3. *The primary divisions of every natural Group, of whatsoever extent or value, are* THREE, *each of which forms its own Circle.*

1. Little need be said on the first proposition, since it is in complete accordance with the theory supported by MM. Macleay, Fries, Agardh, Oken, &c. I have merely modified it for the purpose of showing that, strictly speaking, *every group is not a circle*, since in many which, by the theory of representation, can be proved to be natural, the circle is incomplete, either by the extinction or by the non-discovery of certain types. The aberrant group of the class *Aves*, of the order *Raptores*, and of the family of *Picidæ*, are all striking examples of this truth.

2. This, which may be termed the *theory of representation*, was

this order. But it should not have been concealed that the merit of having first united the *Passeres* and the *Picæ* belongs to M. Vieillot, and not to the writer in the Linnæan Transactions. So far back as the year 1816, M. Vieillot named this order *Sylvicolæ*. See his *Analyse Orn.*, p. 25.

first promulgated in the *Horæ Entomologicæ*, where it has been extensively applied, and the author has shown its existence both in some of the highest and in one of the lowest groups of vertebrated animals: yet nowhere can I perceive that it has been declared—what I think it to be—the *only certain test* of a natural group. Circles may be, and have been, formed with such a deceitful appearance of following nature, that the most eminent and the most cautious have been led into a belief that they were strictly natural. If such a group is thought to be complete or *perfect*, it is very well to say, put each of its divisions to the test of returning into itself*, and the fallacy will be discovered; but among groups of a certain value, genera and sub-families more particularly, there is not one in three that *can* be so tested. This inability partly arises from our superficial acquaintance with forms, and partly, as we believe, from there being many real gaps in the chain of continuity. Without, therefore, some other test for a natural group, than the mere circumstance of its returning into itself, or even its simple parallelism with a contiguous group, I consider demonstration not to have been attained. The theory of representation thus steps in, and at once dispels the illusion, or demonstrates the correctness of the series. In the sub-families of *Myotherinæ* and *Parianæ*, I have endeavoured to exemplify this principle of the natural system in all its bearings.

3. The results that have attended my analysis of every natural group hitherto investigated, lead me to differ in the onset from all who have adopted the quinarian system. And so far as regards the order of Insessores among birds, I have endeavoured to shew that the primary circles of each group are invariably THREE. These I have denominated—i. The *typical;* ii. The *sub-typical;* and iii. The *aberrant*. Mr. Macleay, on the contrary, considers that every group is first resolvable into five minor groups, two of which he terms normal, and the other three aberrant. I know not why this talented writer should have chosen to have used this latter mode of division, which is *binary*, and but ill calculated, as it appears to me, to express his own definition of a natural group. Neither he, nor M. Fries,

* Mr. Macleay's Letter to Dr. Fleming, p. 33.

admit a group to be natural which does not form a circle more or less complete. How far the *central* group of M. Fries will agree with this definition, I am not botanist enough to determine; but the normal group of Mr. Macleay unquestionably does not, since he himself tells us that it forms not one circle but two *. The first division, therefore, of every group into two, although useful perhaps in some respects, is clearly artificial.

The aberrant group, as being that which more immediately connects one circle to another, comprehends, from necessity, a greater variety of forms than are generally to be met with in the two others. The union of all these aberrant forms into a circle of their own, is a principle of natural arrangement which has hitherto been undiscovered, and which has therefore claimed, in the following pages, most particular attention. This union, however, must be kept perfectly distinct from that property which was long ago suspected to exist in opposite points of a circle, and of which instances have been given †. These examples, illustrating Mr. Macleay's meaning, appear to me, as they do to him, mere relations of analogy; since, if the suspicion of their *affinity* had been just, we should have had a union of one typical and two aberrant groups; a mode of combination which, to me at least, Nature has in no instance exhibited.

As to the relative rank of the three primary divisions, some difference of opinion may arise; for the truth is, that the principles by which the value of zoological groups are regulated have not been sufficiently investigated. Two groups may be of equal rank, and still be vastly disproportionate in their contents. No one, for instance, would think of pronouncing the class of birds a superior group to that of quadrupeds, merely because the contents of the first, in comparison to the second, are as six to one. Number cannot decide the question; and therefore, as natural groups like these may be equivalent in rank without being so in extent, we are left no other

* "M. Fries lays it down as a rule, that he admits no groups whatever to be natural unless they form circles more or less complete. Let us then apply this rule to what he terms his central group, and which he makes always to consist of two. Does this form a circle? If not, the group cannot be natural according to his own definition."—Macleay on certain general Laws, &c. Linn. Trans., xiv. 58.

† Horæ Ent., ii., p. 349.

alternative than to consider the primary circles of every group as equal in rank and value.

But I wish not to attach too much importance to a term, or, in drawing up these tables of affinities, to depart more than is necessary from the usual mode of exhibiting circular groups. I have, therefore, in every instance, detailed the *subordinate* divisions of the aberrant groups, although, without this explanation, such a plan might convey an erroneous impression of their relative value.

I must now advert to another, and, in my estimation, an unquestionable property of natural arrangement: this is, the direct union of typical groups, without the intervention of those which are aberrant. A vague suspicion of something like this first occurred to me when studying the affinities of the *Laniadæ*, in the year 1824*. This property, however, belongs but to very few groups, since it has only been detected in such as are pre-eminently abundant in species, and are not of a higher rank than families. Beyond such groups, the higher we ascend, the more dissimilar are the typical groups in approximating circles; until, in looking to a diagram of the vertebrated animals, (such, for instance, as that in the *Horæ Ent.*, p. 318,) not only does all appearance of affinity between the external or typical divisions vanish, but it becomes even difficult, in some instances, to trace their analogy. These inferior typical groups, indeed, may be said to have three distinct relations of affinity: one to that which precedes it; another to that by which it is followed; and a third which unites it to a group out of its own proper circle. The two first, on this account, may be termed *internal;* the latter, *external.* This, however, is a question so abstruse, and requires such nicety of investigation, that, for the present, I should rather, perhaps, put it as a query, than consider it as a demonstrated fact. At the same time, I must confess my utter inability to reconcile, by any other theory, the evident and universally acknowledged affinity between the *Thamnophilinæ* and the *Myotherinæ;* between the *Merulinæ* and the *Philomelinæ;* and more especially between the typical *Setophagæ* and the typical *Sylvicolæ.*

* Zool. Journ., i. p. 302.

Unless these affinities, which I have fully detailed, can be disproved or explained by some other mode of reasoning, it seems to me impossible to arrive at any other conclusion *.

Such are the principles of natural arrangement discoverable by analysis, which more or less pervade the entire order of Perching Birds. Aware that they are, in a great measure, opposed to every theory yet started upon the subject, I have been anxious to establish them by facts which are incontrovertible, and by arguments founded not merely upon structure, but upon every circumstance, even the most trivial, that is yet known of the economy of the birds themselves. It is with these facts, and with these inferences, that such naturalists as wish to establish other conclusions must deal.

It cannot be too often repeated, that science has nothing to do with mere opinions, or with abstract reasoning. Authentic facts and just inferences, the former capable of being verified, and the latter founded exclusively upon analysis, and in unison with some general harmony of creation, are the only arguments which will possess any permanent influence.

The truth or the fallacy of these opinions must therefore entirely repose upon the proofs here adduced ; for although similar results have attended the investigation of other departments of nature, these results have not yet been laid before the public in detail †, and conse-

* Recent investigations in another department of Zoology, more abundant in forms and species than that of the class Aves, lead me strongly to suspect the existence of *another* property in natural groups, which at present I shall merely state as an hypothesis. It is the union of the *most* aberrant group in one circle, with the *most* aberrant in the next ; so that in a diagram of the Order Insessores, formed either on Mr. Macleay's plan of five circles, or of mine upon three, one circle would unite *all* the Tenuirostral types, another the Fissirostral and Scansorial, and a third the typical and sub-typical. The whole would thus be represented by three great circles, one within the other, *and this without the least derangement of the series here exhibited.* It must, however, be premised, that this principle cannot be clearly traced in Ornithology, because the Tenuirostral or Grallatorial groups are remarkably deficient in their numerical contents. In Entomology, the very reverse of this appears to be the case ; and it is there, if my suspicions are well founded, that it may probably be detected.

† The essential characters of several of the groups in Conchology, slightly mentioned in the two volumes of ' Zoological Illustrations,' new series, now in course of publication, depend upon the same laws. I may also be allowed to cite, in corroboration of the theory now advanced, " The principles which appear to regulate the geographic distribution of man and of animals," as detailed in the ' Encyclopedia of Geography,' p. 245—266, the proofs sheets of which are now before me. So far as concerns the variation of Man, I feel all the confidence that can result from being supported by such philosophers as Cuvier and Blumenbach. On this point the theory is *theirs, not mine.* (July 1831.)

quently possess as yet no claim to corroborative evidence. Seeing, nevertheless, that the longest life is insufficient to analyse more than an insignificant portion of Nature's works, and that centuries, probably, may elapse before the true arrangement of all known animals, by such a mode of investigation, can be detected, the mind may be allowed to take a wider range; and, presuming that a system regulating such an important and comprehensive class of the animal kingdom would necessarily pervade all nature, let us briefly consider the subject under this light, divested of metaphysical definitions.

1. The true nature of *Matter* has never yet, and probably never will be, clearly understood. Philosophers, however, distinguish two divisions, to which they give the names of *ponderable* and *imponderable;* while electricity, which, from its peculiar phenomena, cannot be comprised under either, is still conceived by some to form a third.

2. As ponderosity is that quality of matter by which it is most distinguished from Time and Space*, from Light and Heat, so we may esteem it the typical peculiarity of *Matter*.

3. Ponderable matter, in common language, is termed a body, and of such bodies we know only of three sorts—i. Animals; ii. Vegetables; and iii. Minerals—the two first being organic, the latter inorganic.

The general sense of mankind, from the earliest ages to the present time, has concurred in considering all the substances composing our globe as belonging to one or other of these three divisions or kingdoms. This conclusion, indeed, is so natural, and appears to me so just, that it seems almost needless to uphold its propriety. It has been insisted, however*, that the primary division of matter is into organic and inorganic†. Now, to use this distinction‡ in common

* See Horæ Ent., 179.

† Horæ Ent., p. 175.

‡ 'Who does not see that I was here hinting at the quinary division of matter as much as if I had expressed it tabularly thus?

MATTER.

Normal Group, Organic.	1.	Animals.
	2.	Vegetables.
Aberrant Group, Inorganic.	3.	* * *
	4.	* * *
	5.	* * *'

—Macleay's Letter to Dr. Fleming, p. 10.

Mr. Macleay, however, upon a former occasion, observes, with more justice, 'We have two natural, *but I fear somewhat arbitrary*, divisions of matter into organic and inorganic. No person denies the

language is perfectly unobjectionable. But I must confess my inability to discover upon what valid grounds it can be adopted in *natural* classification. The most extraordinary result of this division of matter is the exclusion of the mineral kingdom; a kingdom, moreover, which has recently been so ably studied, that its circular affinities would appear to have been demonstrated*. It has been urged, indeed (Horæ Ent., p. 175), as a reason for excluding mineralogy from the true department of natural history, that its laws depend upon chemistry; but I do not see the force of this objection, and I have already stated an objection to this binary division of a group, as being inconsistent with the theory that all *natural* groups are circular.

4. In what way the *mineral* kingdom may be connected on one side to the vegetable, and on the other to the animal, has never been precisely stated. Yet there are many circumstances, among which the microscopic observations of Robert Brown are not the least interesting, which shew, that this affinity is highly probable, while the union of the two great divisions of organised matter, strictly so termed, the animal and the vegetable, is incontestible.

5. In the *Vegetable*, or subtypical kingdom, botanists have long ago distinguished three great divisions, namely Monocotyledones, Dicotyledones, and Acotyledones; but the circular affinities of these groups have received no attention.

6. In the *Animal* kingdom, which is unquestionably the typical perfection of matter, the penetration of that distinguished zoologist, whose name I have so often quoted, has detected an undeniable tendency to a circle. "It must, however, be remembered, that M. Virey, one of the most eminent zoologists of France, assuming the nervous system for his basis, long since divided the animal kingdom, without assigning names to them, into *three* sub-kingdoms †," while many

existence of this division in nature, still less is the use of it to be despised.'—Horæ Ent. And again, 'Matter, whether organised or in a brute state, whether animal, vegetable, or mineral, *is very little if at all different in itself*.'—Horæ Ent., p. 188.

* 'M. Ampère, as great a mathematician as chemist, has published a *Classification Naturelle pour les corps simples*, and proved that "les corps sont tellement coordonnés l'un à l'autre, qu'ils ne forment non plus une série *mais un cercle*." '—Macleay's Letter, p. 21.

† Kirby, Int. to Ent., iv. 362. I regret not being better acquainted with M. Virey's theory. Mr. Kirby, whose words I quote, refers to 'N. Dict. d'Hist. Nat.,' ii. p. 25.

reasons might be adduced in favour of the supposition, that the three aberrant divisions of Mr. Macleay (Acrita, Mollusca, and Radiata) unite and form a circle of their own.

7. Limiting our attention to the sub-kingdom *Vertebrata*, who does not perceive that the fishes make as near an approach to the aquatic serpents as to the aquatic quadrupeds? or that the *Reptilia* (Macl.) do not evince a much greater tendency to unite with the fishes than with the birds? Between these last and the reptiles, the hiatus is not only wide, but vast. Yet the similarity which some of the water-serpents bear to the eel-like fishes is so strong, that a cursory observer would not detect the two classes. A single genus, in fact, would be sufficient to render the union perfect.

8. Finally, looking to the aberrant group of the class *Aves*, it might be expected that I should shew in what manner they are united. I shall not, however, at present attempt to do this. Not only is it highly probable that several important forms among the *Natatores* are extinct or undiscovered*, but I consider the circular arrangement of the *Rasores*, as proposed in the Linnæan Transactions, to be completely artificial.

From these considerations it appears highly probable, that the same principles which regulate the natural arrangement of the Insessorial birds, are prevalent in all the higher groups of nature.

9. The most comprehensive view which the human mind can ever obtain of that sublime Plan which has emanated from Omnipotence, must, in *every* branch of science, be partial and imperfect†. From such a Being nothing can emanate but what is replete with order and harmony, with design and instruction. Of this the holy records of His word assure us, and the works of His hand proclaim the solemn truth. "The instruction of man," says a learned and pious naturalist, "was best secured by placing before him a book of emblems or symbols, in

* Since the above was written, I find that two extraordinary genera, which seem to disturb all the systems, as partaking both of the nature of the *Natatores* and the *Rasores*, have been discovered in South America. They have been just described by my learned and estimable friends, MM. Isidore Geoff. Saint-Hilaire and Lesson, under the generic names of *Attagis* and *Thinocorus*. These forms I have not yet seen.

† See also *Annul. Jav.*, Pref., xii.

which one thing might represent another. If he was informed by his Creator that the works of creation constituted such a book, by the right interpretation of which he might arrive at spiritual verities as well as natural knowledge, curiosity and the desire of information concerning these high and important subjects would stimulate him to the study of the mystic volume placed before him, in the progress of which he would doubtless be assisted by that DIVINE guidance which even now is with those who *honestly seek the truth.* Both divines and philosophers have embraced this opinion, which is built upon the word of GOD itself*."

10. All that we can know with certainty on the nature of this ALMIGHTY BEING must be gathered from the inspired volume. We are there expressly told that the GODHEAD is THREE-FOLD, yet ONE AND UNDIVIDED. If to awaken, to strengthen, or to increase our faith in this high mystery, the ALMIGHTY condescended to employ other means and other helps for our conviction, we can conceive no other so intelligible to human reason, as that this great truth should be proclaimed by the wonders of creation. These instruments of "spiritual verities," as they have prophetically been termed†, surround us on every side;—they are within our grasp—they speak to our perceptions. Let us not then believe, that the power of discerning such spiritual truths by these their material symbols has been withheld from us, even in this our fallen state. Let us rather, with humble thankfulness, adore that GOD, who, to increase our faith in his word, enables us to discern, however dimly, in *earthly* things, the shadows of such as are *heavenly.* Sw.

Tittenhanger Green, St. Alban's,
July, 1831.

* Kirby, Int. to Ent., iv. 402.

† The most natural and consistent interpretation of 1 Cor. xiii. 12. Βλεπομεν γαρ αρτι δι' εσοπτρου εν αινιγματι, is, that "we see now as it were in a mirror the glory of God *reflected enigmatically by the things that he has made.*"—Kirby, Int. to Ent., p. 402, *note.*

PREFACE,

BY

MR. SWAINSON.

THAT the principles of natural arrangement explained and developed in this volume may not be blended with extraneous topics, I shall now advert to such others as seem to require notice.

In the first place, I feel that some apology is due both to His Majesty's Government and to the Public at large, for the tardiness with which this Volume has followed the first. Whatever blame may be attached to this delay, must fall exclusively upon myself, as Dr. Richardson's portion has long been prepared. But my desire repeatedly to revise the groups, and submit their contents to many and diversified tests, not even alluded to in the subsequent details, has occupied no inconsiderable portion of two years; while impaired health, and the necessity of prosecuting literary engagements previously made, have all contributed to retard the publication.

As I have found it necessary, in the body of the work, to introduce many new groups, and allude to others defined in the Appendix, it seems necessary to explain the views that have regulated this proceeding.

It has been urged, in defence of modern genera, that, even in a system confessedly artificial, they are of great use, both in assisting the discrimination of forms, and abridging the labour of the student in his search after species. Granted. But this principle, like every other, may be carried too far. The authors and advocates of artificial systems, having no definite or acknowledged rule to regulate their groups, are at full liberty to make as many genera or sub-genera as they please; and so long as these divisions are capable of clear and

concise definition, they answer the ends proposed; namely, clearness of arrangement, brevity of description, and facility in finding species. But the human mind is ever prone to extremes, and the passion for dividing and subdividing, and giving names, may become as great an evil as that which led the followers of Linnæus to deprecate *all* division, and to view with abhorrence the slightest attempt to break up the old groups. Now the point at which these artificial genera and sub-genera should stop is, where they can be no longer defined with reference to the end proposed; that is, when their peculiarities are so slight that they cannot be pointed out in a clear and comprehensive manner. When, to make them intelligible, it becomes necessary to draw up long and perplexing characters, the very object of their makers is defeated. No clearness is gained, no facilities of research afforded; the student is bewildered, and the experienced naturalist consumes more time in reading over and comparing these generic *chapters*, than would enable him to glance his eye over twenty good specific characters. The tedious and intolerable length of such definitions, it must be confessed, is inevitable; for their authors, not being acquainted with the *principle of variation* in their group, are obliged to specify *all* its characters; whereas, if the group was a natural one, and its true distinctions had been studied, its essential characters, as we shall repeatedly exemplify, might be expressed in two or three lines. Fortunately, the only group in Ornithology which has apparently suffered from this evil is that of the *Falconidæ*. In Entomology, however, its pernicious consequences are nowhere so conspicuous as in the recent works upon British Insects: where the generic characters, for the most part, are so complicated and prolix as to occupy half a page.

To show that this passion for *genus making* among us has reached a point bordering upon the ridiculous, I need only state a fact, asserted by one who seems not to be conscious of following in the same track, "that the *Musca putris* of Linné has actually been converted into *three* species, belonging to *two* genera*."

* Stevens, Catalogue of British Insects, Pref., p. xiii.

If anything is calculated to invest Natural History with a repulsive aspect, and to hide all the enticing charms of the science, it is assuredly this mode of encumbering it with learned names and prolix definitions. The only merits of artificial systems are in pointing out differences, and in abridging labour; when they do this, they are not only useful, but, in our present state of knowledge, absolutely essential. To combine them, however, with the natural system, is as hopeless as it is impossible. Mr. Macleay, who in this department is a host, has justly said, "It is the evil of *half-artificial* systems, that while they are at utter variance with natural affinities, they do not even answer the humble purposes of a catalogue*."

But no such latitude of *making* groups is allowed to the follower of the natural system. His decisions are regulated by certain rules, to which, as he finds them capable of definition, he is compelled to adhere. If he understands his genus, he knows that that genus, theoretically speaking, contains certain types of form, or sub-genera, indicated by two or three nice but discriminating characters; and to these sub-genera he either gives patronymic names, as in the case of *Scarabæus* (*Horæ Ent.*, p. 497), or he designates them by numbers, as in *Phanæus* (Ib., p. 124). If he adopts the former plan, he must, from necessity, considerably augment the nomenclature of the science; but if, on the other hand, he chooses the latter, he must, *to be consistent, reject all sub-generic names throughout Zoology*. Now it so happens that many of these sub-genera have been named long ago, and are so strikingly marked that zoologists have mistaken them for genera: hence, if the plan of naming them was suddenly relinquished, more confusion than perspicuity would ensue. We must, therefore, at least for the present, follow the first plan, since to retain a patronymic name to one of the types in a generic group, and withhold it from another, would introduce an inconsistency and confusion in nomenclature perfectly intolerable.

In designating the higher groups, I have not considered it expedient to invent names for the purpose of showing the equivalent value of

* Annulosa Javanica, p. 36.

the *typical*, the *sub-typical*, and the *aberrant*. The merit of first uniting the *Rasores*, the *Grallatores*, and the *Natatores* into the aberrant division of the class AVES, belongs to one no less ennobled by birth than by philosophic knowledge. To Charles Lucien Bonaparte, Prince of Musignano, not only the eyes of America but of Europe may be turned, as to one who seems destined by Nature to confer imperishable benefits on this noble science.

The family names, according to general custom, terminate in *idæ*. No authority can be quoted for these names, since they have been used by many, in opposite senses, without having been defined *. The names of the sub-families terminate in *inæ*, or occasionally in *anæ*.

In the progress of the work through the press, much new information has been acquired †, but I am happy to say without occasioning any other alteration in my views than such as regard the sub-genera of the genus *Linaria*, which seems to enter that of *Coccothraustes* by means of the Green Linnet (*Loxia chloris*, L.). *Coccothraustes melanura*, *vespertina*, &c., thus constitute the Fissirostral type of this sub-family, and preserve more closely its analogy to *Bombycilla*.

The assistance I have received in this arduous undertaking has been so important that, notwithstanding the possession of one of the largest ornithological museums in Britain, I question much whether it could have been prosecuted without the united support of men of science, of learning, and of liberality.

My first and greatest thanks are due to M. le Baron Cuvier, and to M. Geoffroy Saint-Hilaire, to whom the nature of my object in visiting the French Museum was made known, and from whom I received facilities for studying, rarely granted either to foreigners or

* On this point I shall, upon all occasions, act upon the following determination of the author of the "Annulosa Javanica," "protesting" with him "against the slovenly mode lately adopted by some naturalists," both in England and on the Continent, of publishing names without definitions—"*In these pages all names of mere catalogues, &c., shall be as much overlooked as if they never had existed.*" Macleay, Ann. Jav., p. 10.

† The opinion expressed at p. 173, that our *Cinclus Americanus* was different from the *Cinclus Pallasi*, has been fully confirmed by a specimen of the latter bird sent from Nepaul, and now in the possession of Mr. Gould. It perfectly agrees with the description given by M. Temminck.

to natives. Nothing redounds more to the honour of scientific institutions than to see them superintended by such men, not only great and illustrious by their own discoveries, but despising all those national or petty feelings of jealousy which influence narrow minds.

To the politeness of M. Isidore Geoffroy Saint-Hilaire I have elsewhere alluded *. Nor must I omit, in this place, to assure my friend M. Lesson of the grateful recollections I shall ever entertain of his kindness, not only during my residence in Paris, but since my return. To him am I indebted, among other interesting birds, for the Fissirostral type of the *Motacillinæ*, which has fully confirmed all I ventured to express at pp. 203 and 230.

Nor has our own National Museum proved an unproductive field for research. Rich in the Ornithology of the Northern regions, it has furnished much valuable information, and the means of determining several new species. Whatever reasons there might have been for censuring the general management of this institution, they have, we believe, long ceased to exist. The magnificence of the new rooms devoted to Zoology; the sedulous care bestowed upon every donation; *its immediate accessibility;* but, above all, the free and courteous manner in which its treasures are *gratuitously* opened to the public and to the man of science, demands the highest praise. Let but the Government second the zeal of its officers, and the public lend their aid by the contribution of specimens, and in a few years, the British Museum will reflect honour upon a powerful and wealthy nation. To J. G. Children, Esq., as the Officer more particularly in charge of the Zoological subjects, my thanks are especially due, not merely for the courteous discharge of his official duty, but for all those prompt and nameless facilities which a scientific student stands so much in need of.

In the Ornithological productions of our Eastern Empire, the Museum of the Honourable East India Company is without parallel. To this also I have had free and unrestrained access; and this gratification has been rendered doubly agreeable by the kindness and

* Zoological Illustrations, new Series, vol. i. pl. 8.

liberality of Dr. Horsfield, under whose able superintendence the whole is placed.

I have great pleasure in offering my best thanks to the Council of the Linnæan Society, who, with their usual liberality and love for science, gave me free permission to make use of their noble collection of Australian Birds. Many errors in their descriptions * have been thus detected, and the geographic range of several groups, confounded with those of America, have been better ascertained.

I feel bound also to return my acknowledgments to the Council of the Zoological Society for their well-intentioned permission to make use of their Museum in Bruton-street; although, from the peculiar wording of the order, and the subsequent prohibition by its officers of taking notes, this permission, for all effectual purposes, was rendered nugatory. The work, however, will not, I trust, suffer much from this. Dr. Richardson has had free access to the northern species; and the Museum, rich only in the ornithology of Java and Sumatra, will bear no comparison, even in those productions, with the collections made by MM. Duvaucel and Diard, now in Paris; all of which, by the liberality of MM. Cuvier and Geoffroy Saint-Hilaire, I have minutely examined.

Sir W. Jardine, Bart., and P. J. Selby, Esq., the able authors of the "Illustrations of Ornithology," have both materially contributed to assist these researches, by transmitting to me, from time to time, all new or dubious forms which have come to their respective museums. When it is remembered that these gentlemen are themselves engaged in publishing ornithological novelties, such disinterestedness demands an especial and grateful acknowledgment.

To that enterprising traveller and accomplished naturalist, William J. Burchell, Esq., the public expression of my thanks cannot be here omitted. His vast collections, formed in the interior of Southern Africa, have been at all times open to me; and it was here that I became acquainted with the new Genus *Chætops*, so peculiarly interesting as forming the Rasorial type of the *Merulinæ*, connecting that sub-family to the *Crateropodinæ*.

* Linn. Trans., xv.

Many other individuals have contributed their assistance in various ways towards this attempt at illustrating the natural system. A further enumeration might be tedious, but I cannot pass over the liberality experienced from Sir JAMES M'GREGOR in allowing numerous specimens from the Fort Pitt Museum at Chatham to be sent for examination.—The great instruction I have derived from a large collection of Mexican Birds in the possession of JOHN TAYLOR, Esq., the well-known Secretary of the Geological Society—and an inspection of the noble collection of drawings made under the superintendence of GENERAL HARDWICKE, during his Zoological researches in British India.

It is almost unnecessary to add how much I am indebted to the invaluable works of LE VAILLANT, WILSON, AZARA, and SONNINI, since their names will so frequently occur in the following pages. These men studied nature, unshackled by system, and they have thus rendered their works imperishable. Of this school, it is deeply to be lamented that nearly the only living member is my friend Mr. AUDUBON. I regret much that his instructive *Ornithological Biography* issued from the press nearly at the time this was terminated. It is replete with facts of the highest interest. From purely systematic writers, I have derived comparatively but little assistance.

Such have been the ample materials which I have now endeavoured to combine; with what success it is not for me to judge. If such parts of the great scheme of Nature as are already known have been better illustrated, or one step has been made towards the further developement of her first principles, my chief object has been attained.

Sw.

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NORTHERN ZOOLOGY.

PART II.

AVES.

RAPTORES.

VULTURIDÆ.—*VULTURES.*

[1.] 1. SARCORAMPHUS CALIFORNIANUS. (Vigors.) *Californian Vulture.*

GENUS. Sarcoramphus. DUMERIL.
Vultur Californianus. SHAW. *Nat. Mis.*, ix., pl. 301.
Californian Vulture. LATH. *Syn. Suppl.*, ii., *p.* 3.
Vultur Californianus. IDEM. *Ind. Suppl.*, p 2.
Buzzard. LEWIS & CLARK. *Journ., &c.*, iii., p. 48, No. 4.
Cathartes Vulturinus. TEMM. *Pl. col.* 31.
Cathartes Californianus. BONAP. *Syn.*, p. 22.
Sarcoramphus Californianus. VIG. *Zool. Journ.*, ii., p. 375.
Vultur Californianus. DOUGLAS. *Zool. Journ.*, iv., *January*, 1829, p. 328.

THIS great Vulture is an inhabitant of the shores of the Pacific, and was first introduced to the notice of naturalists by Mr. Menzies, who brought a specimen from California, and deposited it in the British Museum. It has not been discovered to the eastward of the Rocky Mountains, and I can, consequently, make no addition to its history from personal observation; but Mr. David Douglas has given an interesting account of the habits of the species in the *Zoological Journal*, from which the following notices are extracted. He represents it as a common bird in the woody districts of California, which he met with in the summer as far north as the forty-ninth degree of latitude; but nowhere so abundantly as in the valley of the Columbia, between the Grand Rapids and the sea. "They build," he says, "in the most secret and impenetrable parts of the pine forests, invariably selecting the loftiest trees that overhang the precipices on the deepest

and least accessible parts of the mountain valleys. The nest is large, composed of strong thorny twigs and grass, in every way similar to the nests of the eagle tribe, but more slovenly constructed. The same pair resort for several years to the same nest, bestowing little trouble or attention in repairing it. They lay two nearly spherical jet-black eggs, about the size of those of a goose. They hatch generally about the first of June, and the period of incubation is twenty-nine or thirty-one days. The young are covered with thick whitish down, and are incapable of leaving the nest until the fifth or sixth week. Their food is carrion, or dead fish: in no instance will they attack any living animal, unless it be wounded and unable to walk. Their senses of smelling * and seeing are remarkably keen. In searching for prey, they soar to a great altitude, and on discovering a wounded deer, or other animal, they follow its track until it sinks, when they descend precipitately on their object. Although only one bird may be at first in possession of the carcass, few minutes elapse before the prey is surrounded by great numbers, and it is then devoured to a skeleton within an hour, even should it be one of the larger animals, a stag, for instance, or a horse. Their voracity is almost insatiable, and they are extremely ungenerous, suffering no other animal to approach them while feeding. After eating they become so sluggish and indolent, as to remain in the same place until urged by hunger to go in quest of another repast. At such times, they perch on decayed trees, with their heads so much retracted, as to be with difficulty observed through the long, loose, lanceolate feathers of the collar. The wings, at the same time, hang down over the feet. This position they invariably preserve in dewy mornings, or after rains. Except after eating, or while guarding their nest, they are so excessively wary, that the hunter can scarcely ever approach sufficiently near even for buck-shot to take effect on them, the fulness of the plumage affording them a double chance of escaping uninjured. Their flight is slow, steady, and particularly graceful, gliding along with scarcely any apparent motion of the wings, the tips of which are curved upwards in flying. They are seen in greatest numbers, and soar highest, before hurricanes or thunder-storms. Their quills are used by the hunters as tubes for tobacco-pipes."

DESCRIPTION

Of *male* and *female* specimens shot by Mr. Douglas, in lat. 45½° N., and now in the Museum of the Zoological Society. The sexes are alike in plumage, but the female is a size larger.

Colour of the plumage in general brownish-black. On the back and lesser wing-coverts the feathers have narrow margins of pale umber-brown. A white band crosses the wing on

* Mr. Audubon, in a highly interesting paper published in the *Edin. Ph. Journal*, states, that the Vultures are entirely guided by sight, and not by smell, in the discovery of their food.

the tips of the greater coverts. The tail is black to the extremity. The feathers clothing the lower part of the neck, and those on the breast, have each a narrow, pale, shining streak along its shaft, which contributes to give them a more pointed appearance. There is a white longitudinal band on the flank, and a broader one, opposite to it, on the lining of the wing, that includes the whole of the greater inner coverts. Thighs black. *Bill* glossy yellow. "*Irides* pale red, and the pupils light green." A triangular space, between the nostrils and crown of the head, is rather thinly clothed with short black hairy feathers; and there are also a few feathers on the lores, but the rest of the head and neck is covered with smooth naked skin, which, on the former, "has a deep orange colour, and on the latter a brownish-yellow, with bluish changeable tints." *Legs* bluish-black.

Form, &c.—The *head* is small, scarcely exceeding the neck in diameter. The *bill* is three inches and a half long; the ridge of the upper mandible is straight, and is produced to its hooked tip, nearly in the same line with the flattish crown of the head; its cutting margin is undulated, there being an obtuse lobe immediately anterior to the cere; and another smaller one, but equally well marked, on the horny part of the mandible. The line of union of the point of the bill with the cere, is deeply indented, the former sending an angular process backwards towards each nostril. The angle of the mouth does not extend quite so far back as the orbit. The *nostrils*, of an oblong-oval form, are longitudinal, with a slight degree of obliquity, and are situated rather nearer the ridge of the mandible than to its cutting margin. The *auditory opening* is semi-oval and naked. The feathers on the base of the neck have lengthened lanceolate tips, and those immediately adjoining the naked skin stand out, so as to form a kind of ruff, from which there is a gradual transition to the smooth-lying plumage of the breast. All these feathers have detached flexible barbs, their tips alone being more compact. The naked skin extends down to the crop on the forepart of the neck, but it is not so conspicuous below as in the Black Vulture (*Cathartes atratus*), being nearly concealed by the ruff just mentioned. The folded *wings* reach a little beyond the tail; the third quill feather is the longest. The *tail* is even, and consists of fourteen feathers, which are rounded at the ends. The *tarsi* are naked, and are protected anteriorly by large oblong transverse scales, or *scutelli*. The *toes* are long and slender, and are scutellated above, nearly their whole length. The middle one is the longest, and it is connected to the lateral ones at the base by webs. The hind toe is short. The nails are short, and slightly curved.

Dimensions,

Copied from Mr. Douglas.

	Inches.		Inches.
Length	56	Circumference of the neck	9
Circumference of the body	40	Length of the body	24
Length of the beak	3½	Extent between the tips of the wings, (9 ft. 8 in.)	116
Circumference of the head	9	Length of the tarsus	4¾
Length of the neck	11	„ of the tail	15

Dimensions

Of the larger specimen when mounted.

Length from the tip of the bill to the end of the tail	48	Length of the bill, following its curve from tip to nostrils	3.
„ of the tail	16		
„ of the bill from the angle of the mouth	3		

[2.] **1. Cathartes Aura. (Illiger.) *Turkey-Vulture.***

Genus. Cathartes. Illiger.
Turkey-Vulture, or Turkey-Buzzard. *(Vultur aura.)* Wilson, ix., p. 96, pl. 75, f. 1.
Cathartes Aura. Illiger. *Prod.*, p 236. Bonap. *Syn.*, p. 22.
Wannah-kœoo (*Bald-head*). Cree Indians.

Wilson informs us, that in the northern and middle sections of the United States, the Turkey-Vultures are partially migratory, the greater part retiring south on the approach of cold weather; but that considerable numbers remain all winter as far north as New Jersey. They breed, he says, in the month of May, among the secluded swamps of that State; the female laying two or four eggs of a soiled-white colour, splashed all over with chocolate mingled with blackish touches, particularly towards the great end. The place selected for the nest is generally the decayed stump of a tree; the male watches while the female sits; and, if not disturbed, they will occupy the same breeding-place for several years. The young are clothed with a whitish down, and have the habit, when handled, of vomiting the offensive contents of their stomachs upon their incautious disturber. The Turkey-Vulture is said to be an occasional visitant of Nova Scotia, and Lewis and Clark observed it on the banks of the Columbia *. In the interior of the continent, however, its summer migrations reach a considerably higher latitude than they do either on the Atlantic or Pacific coasts, owing, probably, to the greater warmth of the summer in the inland districts more speedily producing the necessary putrefaction in the animal substances on which it feeds. Following the direction of the Prairie Lands lying on the eastern side of the Rocky Mountains, it reaches the banks of the Saskatchewan, in the fifty-third parallel of latitude, late in the month of June, after the arrival of most of

* The following is an extract of a letter from Mr. David Douglas:—

"The *Vultur Aura*, or Common Turkey-Buzzard, is an exceedingly rare bird on the North-west coast of America. The few that I saw were on the low plains of the Multnomah, in the autumn and winter of 1826. Apparently it dispears at all other seasons; and, consequently, can be regarded as merely a bird of passage in that country. Lewis and Clark more than once mention this bird in their narrative; but, great as their authority ought to be respecting this common bird of the United States, I am induced to think that they mistook the *Vultur Atratus* for it, as the latter is one of the most common birds west of the mountains. On the low marshy islands of the Columbia, a solitary *Vultur Aura* is sometimes seen shunning and shunned by all others of his kindred. The Black Vulture, though a smaller bird, is bolder, masters the Turkey-Buzzard, and drives him away from the carrion. These two birds are assuredly distinct species, not varieties, as some have supposed. In Upper Canada, near Sandwich and Lake St. Clair, in 1823, I saw vast numbers of the *V. Aura*, and had every opportunity of watching their habits, to say nothing of the evident differences in their size and colour, and their dissimilar modes of nesting."—D. D.

the other summer birds. In the southern districts, where the Turkey Vultures are permanent residents, they are gregarious, roost in flocks, and are often seen in companies, soaring to an immense height; but on the banks of the Saskatchewan seldom more than one pair are seen at a time; and they were described to me as being in the habit of sailing along with great rapidity, in undulated lines, under the high banks of the river. I quitted that part of the country too early in the season to have an opportunity of seeing them; but the species has been identified by a specimen from thence preserved in the Museum of the Hudson's Bay Company.

The food of the Turkey Vulture is carrion, which it discovers from a great distance; and, when it has an opportunity, it will gorge itself to such a degree, as to be incapable of rising. It seldom or never attacks living animals, and is highly beneficial to the districts it frequents, by removing putrid substances.

DESCRIPTION

Of the Specimen in the Hudson's Bay Museum.

Colour, brownish-black, deepest on the neck, breast, belly, and between the scapularies. There are some purplish reflexions on the dorsal aspect, with a considerable degree of metallic lustre. The scapularies, secondaries, and greater and lesser wing-coverts, have paler margins. The quill feathers are brownish-black, with light umber-brown shafts; underneath they are lead-coloured. The tail is blacker. The naked parts of the head and neck are reddish, the legs are flesh-coloured, and the claws have a dark horn-colour.

Form, &c.—The *bill* measures, from the angle of the mouth, two inches and a quarter, and is moderately thick and straight from its base to beyond its middle. The upper mandible is covered by cere for more than half its length, and its ridge is slightly arched; its horny point, an inch long, swells out a little, and has a more decided curvature; the cutting margin is undulated, the hook which terminates it is rather small. The under mandible has a deep spout-shaped cavity for the lodgment of its grooved tongue, and its tip is rounded. The *nostrils*, large, oval, naked, and pervious, are longitudinal, and placed nearer to the ridge of the mandible than to its cutting edge*. The wrinkled skin of the head and upper part of the neck is thinly clothed with short black hairs, mixed, on the upper aspect, with down of the same colour. The plumage of the lower part of the neck is full and compact, like that of the back, the feathers being rounded and closely tiled, not pointed and forming a ruff, as in the Californian Vulture; and the line of junction of the naked skin directly encircles the neck; while, in the Black Vulture, it descends obliquely in front. The crop is naked and wrinkled, but is concealed by the plumage of the neck swelling over it.

The tips of the folded *wings* reach to the end of the tail; the third and fourth quill feathers are the longest; the second and fifth are half an inch shorter; and the first is shorter than

* The Egyptian Vulture has a more slender bill, with an even cutting margin, and oblong transverse nostrils. The Black Vulture has a bill of an intermediate form, between that of the Turkey Vulture and Egyptian species.

the sixth, but considerably longer than the seventh. The inner webs of the first four quill feathers are narrowed or sinuated from near their middles; and the outer webs, from the second to the fifth inclusive, are also narrowed. The *tail* is rounded, the exterior feathers being an inch and a half shorter than the middle ones. The *tarsi* are naked, strong, and not very long, and are covered with small rounded convex scales. The *toes* are long, particularly the middle one, which is covered above to the base by transverse shield-shaped scales; the first phalanx of the outer toe is reticulated; the lateral toes are nearly equal to each other in length, and more than an inch shorter than the middle one, to the first phalanx of which they are connected by webs, the outer web being most conspicuous. The posterior toe is more slender and shorter than any of the anterior ones. The *nails* are moderately strong, short, and slightly curved.

DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from the point of the bill to the end of the tail	31	0	to the tip of the bill, in a straight line	2	3
,, of the bill from the angle of the mouth	2	3	Length of the longest quill feather	17	0
,, of the bill, measured along its ridge	2	6	,, of the tarsus	2	6
,, of the horny tip of the bill	1	0	,, of the middle toe and its claw	3	3
,, of the long diameter of the nostrils	0	6	,, of the claw alone	0	9
,, from the anterior margin of the orbit,			,, of the hind-toe and claw	1	2

[3.] **2. CATHARTES ATRATUS. (Nobis.)** ***Black Vulture.***

GENUS. Cathartes. ILLIGER.
Black Vulture, or Carrion Crow (*Vultur Atratus*). WILSON, ix., p. 104, pl. 75, fig. 2.
Cathartes Iota*. BONAPARTE, *Syn.* p. 22, sp. 5.
L'Urubu. (*Sub-genus, Les Percnoptères.*) CUVIER. *Regn. An.*, i., p. 317.
Carrion Crow. UNITED STATES.

I did not meet with this bird, nor have I seen specimens of it brought from the districts to which this work is confined; but it is introduced here on the authority of Mr. David Douglas, who says,—"Throughout the whole of the country that I visited to the west of the Rocky Mountains, the Black Vulture was, I might say, daily seen. In the upper countries around Spokan, Oakanagan, and on Lewis and Clark's River, the plains of the Multnomah, and at Puget Sound, near camps or Indian villages, on the banks of rivers abounding with fish, or in

* We have not considered it expedient to apply to this bird the specific name of *Iota*, given by Mollina to a Black Vulture of Chili. In the first place, there is no evidence to prove that it is the same as the Turkey-Buzzard of North America; and secondly, it must be remembered that the work of this author was "*fait de mémoire en Italie, et fort suspect en plusieurs endroits.*" (CUVIER, *Reg. An.*, iv., p. 143.) SW.

places where deer are numerous, this bird is common *." Mr. Ord informs us, that "the Black Vultures are indolent, and may be observed in companies, loitering for hours together in one place. They do not associate with the Turkey Vultures, and are much darker in their plumage; their mode of flight also varies from that of the latter. The Black Vulture flaps its wings five or six times rapidly, then sails with them extended nearly horizontally; the Turkey Buzzard seldom flaps its wings, and when sailing they form an angle, with the body upwards. The latter, though found in the vicinity of towns, rarely ventures within them, and then always appearing cautious of the near approach of any one. It is not so impatient of cold as the former, and is likewise less lazy. The Black Vulture on the ground hops along very awkwardly; the Turkey Buzzard, though seemingly inactive, hops along with an even gait. The latter, unless pressed by hunger, will not eat of a carcass until it becomes putrid; the former is not so fastidious, but devours animal food without distinction."—"The Black Vulture builds its nest in the large trees of low wet swamps, to which places they retire every evening to rest."

DESCRIPTION,

From Wilson's American Ornithology.

"The Black Vulture is twenty-six inches in length, and four feet four inches in extent. The bill is two inches and a half long, of a dark horn-colour for near an inch; the remainder, the head, and a part of the neck, are covered with a black, wrinkled, caruncled skin, beset with short black hairs, and downy behind. Nostril an oblong slit. Irides reddish-hazel. The throat is dashed with yellow ochre. The general colour of the plumage is of a dull black, except the primaries, which are whitish on the inside, and have four of their broadened edges below of a drab, or dark cream colour, extending two inches, which is seen only when the wing is unfolded; the shafts of the feathers white on both sides. The wings, when folded, are about the length of the tail, the fifth feather being the longest; the secondaries are two inches shorter than the tail, which is slightly forked, the exterior feathers three-quarters of an inch longer than the rest. The legs are limy, three inches and a half in length, and, with the feet, are thick and strong; the middle toe is four inches long, side toe two inches, and considerably webbed; inner toe rather the shortest; claws strong, but not sharp, like those of the *Falco* genus; middle claw three-quarters of an inch long. The stomach is not lined with hair, as reported. When opened, this bird smells strongly of musk."

* See Note, p. 4.

FALCONIDÆ.—*FALCONS.*

In contemplating the *diurnal birds of prey*, arranged by Linnæus under the genus *Falco*, we can be at no loss to discover the two typical forms in the *Toothed-billed Falcons* and the *Sparrow-hawks*. Their peculiarities did not escape the notice even of the earliest systematic writers, and the moderns have only confirmed the justness of the distinction. But, with regard to the remaining groups, much diversity of opinion still exists; not, indeed, as regards the leading divisions, for here likewise the ancients had long ago anticipated our distinctions between the *Eagles, Kites,* and *Buzzards*. It is not, therefore, to these groups, taken *per se,* that any doubts can attach on their respective peculiarities, but rather as to their relative rank with those that are considered typical. These doubts can only be solved by analysis. Were our national or public museums sufficiently rich in species of this family, to allow of this being done, we might hope to gain just conceptions of nature; but such materials are not at present within the reach of our ornithologists. Indeed, so lamentably deficient are our sources of information on this head, "that, of near three hundred described species, not a sixth part is to be consulted in the national repository of this kingdom *." In such a state of things, it is obvious that all attempts to characterize the minor types of form, or to detect the true series of natural affinities, must be viewed with great caution, and lie open to much objection, particularly when opposed to other opinions, founded upon an intimate acquaintance with forms, not in our museums. But if our ideas on the characters and value of the different groups, and on their natural combinations, are, from necessity, so imperfect, still more hazardous is it to attempt the location of species from the mere descriptions and figures to be found in books. We may, indeed, make some approximation to truth, by thus bringing together species which, in many cases, are obviously allied; but the situation of by far the greater portion must be problematical: and, unless we distinctly state how far we have been guided by actual examination, and how far by mere supposition, the reader who wishes to know upon what points he may place reliance, and upon what he may safely doubt, is left completely in the dark.

It is from an attentive consideration of these difficulties, that we have been

* *Zool. Journ.*, i., p. 311.

induced to dissent from several modern writers in our opinions upon this family. That the various forms of which it is composed, exhibit, as a whole, a circular succession of affinities, has been sufficiently proved; but the true series of the secondary groups, among themselves, has not yet been made out. The reason is obvious:—the British school of naturalists, as before stated, want the means, while those of the continent (possessing, in their superb museums, the greatest advantages) have not the inclination to undertake the enquiry. Yet our inability to state in what way the Falcons or Hawks form their own respective circles, cannot militate against the belief, that such is their true distribution. It remains, therefore, to be considered, whether there is presumptive evidence to believe that the three remaining divisions, namely, the *Buzzards*, *Kites*, and *Eagles*, form one circular group, independent of their affinity to the two former. The true Buzzards, of which the *Vulgaris* and the *Lagopus* may probably be types, are slender, long-winged birds; the bill is small, short, and considerably curved: in this structure they agree with the true Falcons, yet they are well known to be distinguished from them, by wanting the toothed-bill, and by the shortness and graduated abbreviation of the exterior quill-feathers. Now, if Nature had proceeded in a simple course, from the Buzzards to the Falcons, we should have had birds uniting the distinctions of both, variously modified. Both these groups being composed, in their typical examples, of slender long-winged birds, with short bills, any species exhibiting the reverse of such characters, and intervening between the two forms, would certainly appear anomalous, on the supposition of a simple series of affinities being aimed at. Yet, that such birds are to be found, even among the few that we are subsequently to notice, is unquestionable. Let us, then, take the *Buteo borealis*, which, as being more allied to the Falcons than to the Kites, may be considered an intervening form between the *Buteo vulgaris* and *Falco*. We here see a large-sized, heavy bird, with shortened wings, not reaching to more than half the length of the tail; while the elongated bill, unlike either that of *Buteo* or *Falco*, obviously assimilates to that lengthened form which belongs to the Eagles. Now, upon the supposition that a bird so constructed is intended to fill up the interval between *Buteo* and *Falco*, and at the same time to unite the former with the *Eagles*, the singularity of its structure is no longer surprising: but if we consider it with a simple reference to the passage between *Buteo* and *Falco*, we are almost tempted to suspect that, in this instance, a real *saltus* has been made. While upon this subject, we may cite an acute observation made by Prince C. Buonaparte, that "the *Borealis* is almost as much an *Astur* of the first section, as a *Buteo*;" a

proof, at least, that its affinities to *Astur* and to the aberrant Eagles adjoining that group, have not escaped observation. Our idea, that the Buzzards are truly united to the Eagles, is still further strengthened by the *Buteo pterocles*, Temm., of which a fine series of specimens, from Mexico, has been submitted to our inspection by John Taylor, Esq., F.R.S., &c. In this species, the wings, as in *Buteo*, are remarkably long, but the bill is so considerably lengthened, that were we to judge alone from this member, we should have no scruple in placing the bird among the *Aquilæ*. On the other hand, it must be remembered, that as every group, from the highest to the lowest denomination, when perfect, contains a representation of the other four, united to a form peculiar to itself; so we might naturally expect that one division of the Buzzards would represent the true Eagles. To ascertain, therefore, whether the resemblances above stated are those of analogy, or of real affinity, recourse must be had to strict analysis. Now this, in our present state of knowledge, cannot be done, at least from the resources to be found in this country. We have thought it advisable to cite the above facts, drawn from the structure of the birds themselves, as likely to awaken the attention of ornithologists to a further investigation of the subject; they will, at least, show that our opinion on the unity of the three aberrant groups, is not entirely without foundation.

In regard to the relative value of the whole group, we consider it equivalent to that of *Vultur* or of *Strix* in its own order, and to the families composing the *Rasores*, *Grallatores*, and *Natatores*. We shall, therefore, in conformity with this impression, contemplate the five principal divisions as *genera*, arranging the subordinate forms, which have been by some naturalists elevated to that rank, as *sub-genera ;*—an uniformity of nomenclature between groups of the same apparent rank will thus be preserved. But it is not this consideration alone which has influenced our decision. Diversified as are the forms among the *Falconidæ*, they are certainly not more so than what may be observed among the *Trochilidæ*. Both these families are so strongly marked, that the veriest tyro in the science can never mistake them; but the Falcons, from their imposing size, by which their peculiarities are rendered more apparent, have attracted more attention, and have been divided and subdivided, until one-half of the modern genera contain but a single species: while the Trochilidæ, exhibiting among themselves a much greater diversity of structure, have only lately been arranged under their primary groups*. If, then, we are to adopt, *as genera*, all the minor divisions that have been proposed

* *Zool. Journ.*, iii., p. 357.

among the *Falconidæ*, we should proceed upon the same principle of nomenclature with the *Trochilidæ;* and in place of limiting the generic distinctions of these latter birds to five, increase the number to twenty-five, as soon as the subordinate types have been detected. We believe that the warmest advocates for generic distinctions would protest against such a measure; and we feel assured that, by the great body of ornithologists, such an innovation would, on no account, be tolerated. It is unfortunate for those who, like ourselves, may be accused of proposing new genera, that in no one department in ornithology has this principle been pushed to such a point of refinement as among the *Falconidæ;* and as very many forms, equally deserving generic appellations, must be named and characterized, to render the nomenclature of this family consistent with the adoption of these genera, suspect that the reproach cast upon the modern school, of making every species a genus, would, in this instance at least, be not altogether unmerited.

In considering the *five* forms of the *Falconidæ* as genera, rather than as subfamilies, we by no means insinuate that the minor distinctions which have been dwelt upon by several able ornithologists who have investigated this family, are either trivial, or that they deserve not to be brought immediately before us. On the contrary, we should recommend to others the plan which we ourselves adopt,—the minute examination of every change of structure, and the assembling together, in minor groups, such species as agree in certain peculiarities. Nay, further, we should proceed, in certain cases, even to impose a name upon such groups. But, in a family already so crowded by *generic* names, we consider it essential to preserve a distinction between groups of unequal value; and not to elevate subgenera, or forms of transition, to a rank they do not hold. *Milvago*, *Polyborus*, *Daptrius*, and *Ibycter*, are unquestionably of the latter description, each confined but to one species. We have another of the same natural group in our own cabinet, equally deserving a patronymic name. By regarding these as genera, each is made equivalent, for instance, to the whole genus of typical Falcons; whereas, by representing them as lesser variations, which in truth they are, the student immediately perceives that their station is subordinate.

A further advantage is gained by this principle of nomenclature: we shall be unshackled in characterizing those minor forms or groups which yet remain to be designated; while, by not bringing them forward to a prominent station in our arrangement, we shall assimilate our nomenclature more to the wishes and opinions of the majority of naturalists, without in the least sacrificing that minuteness and precision, which the student of nature can scarcely carry too far. Sw.

[4.] **1. Aquila Chrysaëtos? *The Golden Eagle.***

Genus. Aquila Antiquorum. Cuvier.
Golden Eagle. Penn. *Arct. Zool.*, i., p. 225, No. 86.
White Eagle. Idem. i., p. 229, No. 90.
Falco fulvus. Lath. *Ind.*, i., p. 10, sp. 4.
Falco candidus. Idem. i., p. 14, sp. 17. ? variety.
The Calumet Eagle. Lewis & Clark. *Journ., &c.*, iii., p. 55, No. 20.
Ring-tail Eagle. Wilson. *Am. Orn.* vii., p. 13. pl. 55, f. 1. Young.
Falco fulvus. Temminck. i., p. 38. Buonap. *Syn.*, p. 24.
Live specimen in the Zoological Gardens brought from the Rocky Mountains.
Eagle, No. 31. *Hudson's Bay Company's Museum.*
Kœoo. Cree Indians.

This powerful bird breeds in the recesses of the sub-alpine country which skirts the Rocky Mountains, and is seldom seen farther to the eastward. It is held by the aborigines of America, as it is by almost every other people, to be an emblem of might and courage; and the young Indian warrior glories in his eagle plume as the most honourable ornament with which he can adorn himself. Its feathers are attached to the calumets, or smoking pipes, used by the Indians in the celebration of their solemn festivals, which has obtained for it the name of the Calumet Eagle. Indeed, so highly are these ornaments prized, that a warrior will often exchange a valuable horse for the tail feathers of a single eagle *. The strength of vision of this bird must almost exceed conception, for it can discover its prey and pounce upon it from a height at which it is itself, with its expanded wings, scarcely visible to the human eye. When looking for its prey, it sails in large circles, with its tail spread out, but with little motion of its wings; and it often soars aloft in a spiral manner, its gyrations becoming gradually less and less perceptible, until it dwindles to a mere speck, and is at length entirely lost to the view. A story is current, on the plains of the Saskatchewan, of a half-breed Indian, who was vaunting his prowess before a band of his countrymen, and wishing to impress them with a belief of his supernatural powers. In the midst of his harangue an Eagle was observed suspended as it were in the air directly over his head, upon which, pointing aloft with his dagger, which glistened brightly in the sun, he called upon the royal bird to come down. To his own amazement, no less than to the consternation of the surrounding Indians, the Eagle seemed to obey

* Lewis and Clark inform us that the Ricaras Indians have domesticated the Eagle, in many instances, for the purpose of procuring its plumage.

the charm, for instantly, shooting down with the velocity of an arrow, it impaled itself on the point of his weapon !

The Golden Eagle is said to build its nest on rocks or on very lofty trees, and to lay two, or more rarely three, eggs of a soiled-white colour. It preys chiefly on the young of the mountain sheep, fawns, hares, &c., and is scarcely ever observed to feed on carrion. The American Golden Eagle has seldom been separated by naturalists from the European one ; but a nominal species has been assigned to both countries, under the name of the Ring-tail, which is, in fact, the young Golden Eagle, distinguished by the base of its tail being white until it reaches its third year. The Ring-tails, probably owing to their being less wary, are much oftener shot than the old birds, and I have not seen an American specimen of the latter, although Prince C. Buonaparte mentions his having obtained one from the Rocky Mountains along with several Ring-tails. Pennant and Latham, on the authority of Mr. Hutchins, mention this bird as an inhabitant of Hudson's Bay ; but it is a very rare and casual visitant of the districts that were frequented by the Hudson's Bay fur-traders in Pennant's time, and Mr. Hutchins's manuscript Notices, to which I have had access, evidently refer to the *F. leucocephalus*. Even Pennant himself, who seems to have been Mr. Hutchins's guide in applying the scientific names to the Hudson's Bay birds, has figured a young Sea Eagle (*F. albicilla*) for the Golden Eagle in his British Zoology. The White Eagle * mentioned by Du Pratz in the History of Louisiana was probably a variety of the Golden Eagle, corresponding to the White Eagle † of the Swiss Alps noticed by Brisson.

DESCRIPTION

Of a specimen, supposed to be under three years of age, shot by Mr. Drummond, in lat. 55°, on the eastern side of the Rocky Mountains, as it was in the act of pouncing upon a small dog.

Colour.—The head and neck are covered by slender pointed feathers, which are white at their bases, dusky-brown in their middles, and have yellowish-brown points. The general colour of the plumage on the dorsal aspect is dull liver-brown, without spots or shadings, except when some of the feathers are ruffled, and their white bases appear. The greater coverts and scapularies are of a more faded brown than the rest of the upper plumage, and the quill feathers are darker, approaching to blackish-brown. The base of the inner webs of the first six quill feathers are white ; and on the seventh, eighth, and ninth, the white extends to both webs. The wing underneath is hair-brown, with an imperfect white band on the bases of the sixth and subsequent quill feathers. The *tail* is white at the base, blackish-brown towards the end, and narrowly tipped with white. The brown occupies less space on the two middle feathers, not exceeding one-sixth of their length, and is sprinkled with white. The outer feathers are

* Penn. *Arct. Zool.*, ii., p 97. Falco candidus. Lath. *Ind.*, i, p. 15.
† Falco albus. Gmelin. *Syst.*, p. 257. F. cygneus. Lath. *Ind.*, i., p. 14.

brown for one-third of their length, and the others have an intermediate quantity. The brown does not join the white in an even line across the tail, as in Wilson's figure, but runs into a peak along the shafts of the more exterior feathers; while in the central ones the reverse is the case, the white being prolonged, on the shaft, into the brown. There are some white feathers about the vent. *Bill* soiled bluish-grey. *Cere* yellow. *Iris* hair-brown. *Feet* yellowish. *Claws* black.

Form, &c.—The *bill*, strong and much hooked at the point, is compressed, with its sides inclined so as to produce a narrow, but not acute, ridge. There is a very obtuse lobe on the cutting margin of the mandible, posterior to the commencement of the hook. The *nostrils* are small, of an oval form, and have a transverse direction. The space between the orbit and nostrils is covered with black hairs arranged in a radiated manner. The eyebrow is prominent and the crown of the head flattened. The *wings* are shorter than the tail. The fifth quill feather is the longest; the fourth nearly equals it; the third is equal to the sixth; the second is intermediate between the sixth and seventh; and the first is a little longer than the eighth, but considerably shorter than the seventh.* The first six have their inner webs suddenly, and their outer webs, with the exception of the first, obliquely sinuated. In the first feather the sinuation commences near the base, but in each succeeding one it is nearer the point, being, in the fourth, about the middle, and in the sixth near the tip. The *tail* is rounded. The *tarsi* are short and strong, and are closely covered to the root of the toes with short brownish-white feathers: the outer thigh feathers hang down to the soles of the feet. The *toes* are short, strong, and are protected above by three transverse large scales adjoining the claws, their bases being reticulated with small scales. The middle toe is the longest; the lateral ones are equal to each other and a little longer than the hind toe, which is the most robust. A short web connects the middle and outer toes. The *claws* are strong, much curved, grooved beneath, and sharp-pointed: the middle one has a deep, sharp-edged furrow on its inner side. The hind claw and the inner one are much larger than the other two.

Dimensions

Of the specimen before it was set up.

	Inches.	Lines.		Inches.	Lines.
Length from point of the bill to the end of the tail	42	0	Length of the bill along the curve of its ridge	2	3
Extent between the tips of the wings	66	0	,, tarsus	4	0
Length of the tail			,, middle toe	3	5
,, longest quill feather	22	0	,, hind claw	2	5
,, bill from the angle of the mouth	2	8	,, ditto, following its curvature	3	0
			,, middle claw	1	6

The *mature* British *F. chrysaëtos* has a dark blackish-brown tail and wings, blackish-brown back, clouded with brownish-black, and a paler and brighter brown head. I have not seen an American one in this state.

* As might be expected in immature birds, differences in the relative lengths of the quill feathers are observable in the Ring tailed Eagles. In a specimen from the Rocky Mountains, in the Hudson's Bay Museum, the fourth quill feather is the longest, and the third and fifth nearly equal it, the remainder having the proportions of those mentioned in the text.

[5.] **2. Aquila (Haliæetus) leucocephala.** *Bald Eagle.*

Genus. Aquila, Antiquorum. *Sub-genus.* Haliætus. Savigny.
White-tailed Eagle. (*Aquila caudâ-albâ.*) Edwards, pl. 1.
White-headed Eagle. Penn.* *Arct. Zool.*, ii., p. 196, No. 89. Mature.
Falco leucocephalus. Lath. *Ind.*, i., p. 11, sp. 5. Mature.
White-headed or Bald Eagle. (*Falco leucocephalus.*) Wilson, iv., p. 89, pl. 36. Adult.
Sea Eagle. (*Falco ossifragus.*) Idem, vii., p. 16, pl. 55, f. 2. Young.
Falco leucocephalus. Temm., i., p. 25. Buonap. *Syn.*, p. 26.
Meekeeshew. (*Name for the species.*) Cree Indians.
Wapustiquan-Meekeeshew. (*White-headed E.*) Idem. Mature bird.
Appisk-Meekeeshew. (*Black-headed E.*) Idem. Immature.
Meekeeseeseesh. Idem. Yearling birds.
Eagle, No. 23. Hudson's Bay Museum. Old bird.
Eagle, No. 29. Loco citato. Young.

This vigorous and rapacious bird is the earliest of the summer visitors to the fur countries, and the period of its arrival has given the name of *Meekeeshew eepeeshim,* or Eagle moon, to the month of March. Temminck assigns for its habitual residence the regions within the Arctic Circle, and Wilson observes that it is found at all seasons in the countries it inhabits. Both these assertions, however, require, I apprehend, to be taken with considerable latitude. We did not, on the late expeditions, meet with it to the north of the Great Slave Lake (latitude 62° N.), although it is common, in the summer, in the country extending from thence to Lake Superior, and its breeding-places in thelatter district are numerous. But in the month of October, when the rivers from which it draws its principal supply of food are frozen over, it entirely quits the Hudson's Bay lands; and if after that period it is to be seen in the northern regions, it can only be on the sea-coast and for a limited time while the sea continues unfrozen. It resides all the year in the United States, frequenting their whole extent of sea-coast and the shores of the large lakes and rivers; and it is known to breed as far south as Virginia, but its nests do not appear to be so common within any part of the United States as they are in the fur countries.

The favourite food of this bird is fish, caught alive; but it preys also on birds and the smaller quadrupeds; nor does it disdain at times to feed on carrion; and it has been known to attack a Vulture in the air, and, having caused it to disgorge

* Pennant, in his account of the Black Eagle of America, does not appear to have clearly distinguished between the Golden and Bald Eagles, and it is probable that his Black-cheeked Eagle may be referred also to the Bald Eagle. But the task of clearing away the difficulties attending these and many other synonymes that have reference to this bird seems to be as profitless as it is hopeless. Latham mentions the same species under the names of *F. Americanus* and *melanœëtus.*

the nauseous contents of its craw, to snatch them up before they could reach the ground*. Like many of the Vultures, it has the custom, after a full meal, of sitting on its perch with its wings drooping down past its feet; and it often keeps its wings half open, with its breast turned to the breeze, as if to cool its skin heated by an abundant and stimulating repast. It takes the scaly objects of its pursuit by pouncing on them with its claws; and for this purpose it haunts rapids and cascades, where the fish, in the efforts they make to ascend the stream in the spawning season, are more exposed to its attacks. Its superior strength also enables it to turn the industry of the Osprey to account, by robbing it of its prey. The assaults it makes on this active bird are described with peculiar animation and a strong feeling of the beauties of Nature in the following extract from Wilson :—

" This distinguished bird, as he is the most beautiful of his tribe in this part of the world, and the adopted *emblem* of our country, is entitled to particular notice. He has long been known to naturalists, being common to both continents and occasionally met with from a very high northern latitude to the borders of the torrid zone. Formed by nature for braving the severest cold; feeding equally on the produce of the sea and of the land; possessing powers of flight capable of outstripping even the tempests themselves; unawed by any thing but man; and from the ethereal heights to which he soars looking abroad, at one glance, on an immeasurable expanse of forests, fields, lakes, and ocean, deep below him, he appears indifferent to the little localities of change of seasons, as in a few minutes he can pass from summer to winter, from the lower to the higher regions of the atmosphere, the abode of eternal cold, and from thence descend at will to the torrid or the arctic regions of the earth. He is, therefore, found at all seasons in the countries he inhabits, but prefers such places as have been mentioned above, from the great partiality he has for fish. In procuring these he displays in a singular manner the genius and energy of his character, which is fierce, contemplative, daring, and tyrannical,—attributes not exerted but on particular occasions, but, when put forth, overpowering all opposition. Elevated on the high dead limb of some gigantic tree, that commands a wide view of the neighbouring shore and ocean, he seems calmly to contemplate the motions of the various feathered tribes that pursue their busy avocations below: the snow-white Gulls, slowly winnowing the air; the busy *Tringæ*, coursing along the sands; trains of Ducks, streaming over the surface; silent and watchful Cranes, intent and wading; clamorous Crows, and all the winged multitudes that subsist by the bounty of this vast liquid magazine of nature.

* Wilson, iv., p. 89.

"High over all these hovers one whose action instantly arrests all his attention. By his wide curvature of wing, and sudden suspension in the air, he knows him to be the *Fish-hawk*, settling over some devoted victim of the deep. His eye kindles at the sight, and balancing himself, with half-opened wings, on the branch, he watches the result. Down, rapid as an arrow from heaven, descends the object of his attention; the roar of its wings, reaching the ear as it disappears in the deep, making the surges foam around! At this moment the eager looks of the Eagle are all ardour; and, levelling his neck for flight, he sees the Fish-hawk once more emerge, struggling with his prey, and mounting in the air with screams of exultation. These are the signal for our hero, who, launching into the air, instantly gives chase, and soon gains on the Fish-hawk; each exerts his utmost to mount above the other, displaying in these rencontres the most sublime aërial evolutions. The unencumbered Eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, probably of despair and honest execration, the latter drops his fish; the Eagle, poising himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods."

This vivid and highly poetical passage may be contrasted with the prosaic, though didactic notice of the same bird, by a great political sage.

"For my own part," says Franklin, "I wish the Bald Eagle had not been chosen as the representative of our country; he is a bird of a bad moral character; he does not get his living honestly: you may have seen him perched on some dead tree, where, too lazy to fish for himself, he watches the labour of the Fishing-hawk; and when that diligent bird has at length taken a fish, and is bearing it to his nest for the support of his mate and young ones, the Bald Eagle pursues him, and takes it from him. With all this injustice, he is never in good case, but, like those among men who live by sharping and robbing, he is generally poor, and often very lousy. Besides, he is a rank coward; the little King-bird, not bigger than a Sparrow, attacks him boldly, and drives him out of the district. He is, therefore, by no means a proper emblem for the brave and honest Cincinnati of America, who have driven all the King-birds from our country; though exactly fit for that order of knights whom the French call *Chevaliers d'Industrie*. I am, on this account, not displeased that the figure is not known as the Bald Eagle, but looks more like a Turkey."

The White-headed Eagle builds a rude nest of sticks, coarsely lined with hay, on the ledge of some inaccessible rock, generally overhanging a rapid, or on the

borders of a lake ; or, in districts which do not afford a suitable cliff, it selects for the purpose a lofty, and for the most part a solitary tree. It lays one or two white eggs, and the male, according to the Indians, takes its turn with the female in the work of incubation. When the young ones are hatched, the industry with which the parents provide them with food is often attested by the air being tainted, to a considerable distance from the nest, by the smell of the fish that they are unable to consume. The period of incubation is over by the middle of May ; but the young require the aid of their parents in procuring food until the month of September.

The Bald Eagle resembles the Golden Eagle in the form of its wings, that are obliquely truncated at the tips, the first feather being short, and the succeeding ones gradually increasing in length to the fourth or fifth, which are the longest; the remainder diminish successively, but less rapidly than the first ones increase. The wings are otherwise large and powerful, and their rounded form, though it may impair the rapidity of flight in a horizontal line, fits them better for soaring aloft in the atmosphere than the acutely-pointed wings of the true Falcons. The great size of the Eagles seems to render it necessary for them to watch their prey from a height at which they appear to be a mere speck when viewed from below, and they are accordingly endowed with an extraordinary acuteness of vision. So great is the similarity of the Bald Eagle to the Golden Eagle in certain states of plumage, that naturalists of no mean fame, as well as less instructed observers, have often mistaken the one for the other. The partially naked tarsi, however, of the Bald Eagle, with the sub-versatile outer toe entirely separated from the middle one, form ready marks of distinction, connected with its habit of seeking its prey in the waters ; and there is also some difference in the form of their bills, that of the Bald Eagle being more rounded on its ridge, with its sides less inclined to each other. It is more difficult to find characters that will serve to distinguish this species from the nearly allied one of the Cinereous Eagle, or *A. albicilla*, of Europe. The pure white head and tail of the *A. leucocephala* are sufficient to characterize the old bird ; but its young are so like those of the *A. albicilla*, that Temminck considers the only marked difference to be in the greater length of the tail of the former. On comparing the forms of the bills of living birds of each species, I could observe the margin of the upper mandible of the young *A. leucocephala* to be more nearly straight, there being only one very obtuse lobe adjoining to the hooked point, whilst in *A. albicilla* the margin was rendered more undulated by the presence of a second lobe posterior to the principal one. These differences were, however, very slight even in the birds that

were compared, and may not be perceptible in all the individuals of the two species. The mature Bald Eagle is rather a smaller bird, and has in proportion a smaller head, than the Cinereous Eagle; its lores are more feathered; and it has a feeble cheeping cry like a hawk, different from the more decided scream of the latter Eagle. Temminck informs us that the Cinereous Eagle is proper to Europe, while the White-headed Eagle is common to the northern hemispheres of both the Old and New Worlds, although it occurs more abundantly in the latter.

DESCRIPTION

Of a *mature* bird, killed at Hudson's Bay.

Colour of the head, greater part of the neck, and of the tail, including its upper and under coverts and the vent feathers, pure white. The back, wing coverts, breast, belly, and thighs, are brownish-black, the margins of the feathers being paler, approaching to a soiled wood-brown tint. The quill feathers are brownish-black, with paler shafts. *Bill* straw-yellow. *Cere* greenish-yellow. *Irides* wine-yellow. *Tarsi* yellow. *Claws* blackish-brown.

Form, &c.—*Bill* three and a half inches long, and very strong, with a convex ridge curved in a regular arc from the cere to the tip. There is a very obtuse and slightly-prominent lobe on the cutting margin of the upper mandible, immediately beyond which the point of the bill droops abruptly to form its hook. The upper surface of the cere is flattened. The *lores* are clothed with short white hairs and feathers that project over the nostrils. The *nostrils* are large, oblong, with one softer margin, which moves as the bird respires; and they have an obliquely transverse direction. The *eyebrow* projects considerably, and the eye is turned obliquely forwards. The feathers on the head are triangular, and towards the base of the neck they become long and pointed. The tips of the folded *wings* reach to the middle of the tail. The quill *feathers* are acute: the fourth is the longest, the third nearly equals it; the fifth is about a quarter of an inch, and the second is more than an inch shorter than the fourth; the sixth is an inch shorter than the second, or an inch and three-quarters shorter than the fifth; while the first is three inches and a half shorter than the second, and just exceeds the seventh, which is two inches and a half shorter than the sixth. The outer webs of these feathers, from the second to the sixth inclusive, are strongly sinuated; and the inner webs, from the first to the fifth inclusive, are still more deeply and abruptly emarginated. The *tail* is rounded. The *tarsi* are feathered for more than half their length; their naked part is covered with small, rounded, convex scales at the base and behind, and is protected anteriorly next the feathers by five large transverse scales. The hind *toe* is short and strong, and is armed with a larger nail than the others. The inner fore toe is a little longer than the hind one, its claw being, however, somewhat smaller; the middle toe is considerably longer, but it is at the same time more slender and has a much smaller nail. The outer toe, though a little longer than the inner one, is the most slender and has the smallest nail of all. There are eight or ten large transverse shield-like scales on the middle toe, four on the hind and inner fore ones, and five on the outer one: all their bases are reticulated. The *claws* are strong, much curved, and acute; and the middle one has a sharp-edged groove on its inner side.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	38	0	Length of the cere on the ridge of the bill	0	8
,, of the tail	14	0	Distance between the eye and the nostril	1	9
,, of the longest quill feather	22	0	Length of the tarsus	3	3
,, of the bill, measured on its ridge	3	6	,, hind claw in a straight line	1	6
,, ,, from the angle of the mouth	3	6	,, ditto, following its curvature	2	3
			,, middle toe	3	0
			,, claw	1	3

A *young bird*, measuring also thirty-eight inches in length, had a black bill, and plumage mostly of a dull-brown, variegated with paler brown and some white. Its tail was blackish-brown, slightly mottled with white. It is said that these birds do not attain their perfect plumage, with a white head and tail, until they reach their fourth year.

[6.] 3. Aquila (Pandion) Haliæeta. *The Osprey.*

Genus. Aquila. Antiquorum. *Sub-genus.* Pandion. Savigny.
Osprey, var. A. Carolina. Lath. *Syn.*, i., p. 46, sp. 26. Idem. *Suppl.*, p. 13.
Osprey. Penn. *Arct. Zool.*, ii., p. 199, No. 91. Selby. *Brit. Orn.*, i., p. 12, pl. 4.
Falco Haliæëtus γ Lath. *Ind.*, i., p. 18, sp. 30.
Aquila Haliæëtus. Meyer. *Tasch.*, i., p. 25.
Fish-hawk, or Osprey. (*Falco Haliætus.*) Wilson. v., p. 1, pl. 37.
Falco Haliætus. Buonap. *Syn.*, p. 26, No. 8.
Common Brown Fishing-eagle. Hudson's Bay Residents.
Eethin-neesew. Cree Indians.

This active and industrious fisher is well known in the fur countries as a frequenter of rapids and cascades during the summer season, particularly in rocky districts, in whose clear waters it can more readily discern its prey. It arrives in the months of March or April, and immediately commences building a new nest or re-occupies its old one, which is almost invariably on a tree, and is composed of long sticks, heaped on each other, and intermixed with large tufts of grass, roots, and other wrack, collected from the shores of the lakes. The choice that it makes of a breeding-place shows that it is not a distrustful bird, for it often places its nest near frequented paths and on a tree of very easy ascent. Wilson remarks that the *purple grakles* are permitted by this bird to build their nests amongst the interstices of the sticks of which its own is framed, where they hatch their young and live together in harmony. The same observation has been made

in the interior of the fur countries. The Osprey lays two or three eggs of a pale cream-yellow colour, stained with blotches and spots of dull orange-brown. The young are hatched early in June, are upwards of two months old before they can fly, and are fed by the parent birds even after they quit the nest. Both young and old retire to the south in October. I did not ascertain the exact northern limits of the range of this species; but during our coasting voyage along the shores of the Arctic Sea we did not observe any kind of Eagle, and Hearne says that none of them breed in the barren grounds north of Churchill. It seems less capable of bearing cold than the Bald Eagle, as it quits the United States on the approach of winter. Pennant informs us that it is very frequent in Kamtschatka, and it is probably equally so on the Pacific coast of North America, thus extending its range from the coast of Labrador quite across the continent.

It lives almost exclusively on fish, which it takes alive, being very rarely observed to attack birds or quadrupeds, or to feed on carrion; Wilson remarks, that it never even picks up a fish which it happens to drop either on land or water. When looking out for its prey, it sails with great ease and elegance, in undulating and curved lines, at a considerable altitude above the water, from whence it precipitates itself upon its quarry and bears it off in its claws; or it not unfrequently, on the fish moving to too great a depth, stops suddenly in its descent, and hovers for a few seconds in the air, like a kite or a kestril, suspending itself in the same spot by a quick flapping of its wings; it then makes a second and, in general, unerring dart upon its prey, or regains the former altitude by an elegant spiral flight. It seizes the fish with its claws, sometimes scarcely appearing to dip its feet in the water, and at other times plunging entirely under the surface with force sufficient to throw up a considerable spray *. It emerges again, however, so speedily as to render it evident that it does not attack fish swimming at any great depth.

The versatility of the outer toe of the Osprey, the strength, curvature, and sharpness of its claws, and the roughness of the soles of its feet, are peculiarities of structure adapted to the better securing its slippery prey; and the shortness of its thigh feathers, unusual in the falcon tribe, is also evidently connected with its fishing habits. So firm is its hold, that it is said not unfrequently to perish by having the imprudence to fix its talons in a fish of such a size and strength as to be capable of dragging it suddenly under water. The superior strength of the

* Pennant informs us that its violent descent is compared by the Italians to the fall of lead into the water; hence they bestow on it the appellation of *Auguista piumbina* (leaden Eagle). "We never heard this name used, during six years' residence in Italy, and the words are not Italian." Sw.

Sea Eagle enables it to profit by the greater industry of the Osprey (in the same way that the Boatswain (*Lestris parasiticus*) obtains its food from the Gulls), by pursuing it when heavily laden with a fish until it drops it, and then snatching up the prize before it reaches the water. In revenge, the Ospreys occasionally unite to drive the Eagle away from their haunts.

DESCRIPTION
Of a *male*.

Colour.—The general colour on the dorsal aspect is liver-brown, the edges of the feathers being somewhat paler. The long and pointed feathers on the crown and hind head are white, with brown central spots. A dark-brown stripe includes the orbit and runs along the side of the neck to the shoulder. The quill feathers are brownish-black exteriorly, their inner vanes being whitish, barred with brown. The tail is dusky hair-brown, crossed by eight bars of dark liver-brown, the inner vanes of the feathers being barred alternately with dusky-brown and soiled brownish-white. The under surface of the body is white. *Bill* bluish-black. *Cere* bluish. *Iris* orange-coloured. *Feet* pale-blue.

Form, &c.—*Bill* short and strong; the cutting margin of the upper mandible is straight to its hooked tip, with the exception of a slight angular projection near the corner of the mouth and an obscure lobe about its middle. The *nostrils*, oblong-oval, extend, with a slight degree of obliquity, nearly the whole length of the cere. The feathers of the forehead project so as almost to conceal the cere above, and the lores are covered by dark hairs and feathers. The *wings*, when folded, pass the tail about an inch. The second quill feather is the longest, the third is scarcely shorter, the fourth is half an inch shorter, and the first is an inch and a half shorter than the fourth, or about half an inch longer than the fifth *. All their inner webs are narrower towards their points, but the sinuations are abrupt and distinct only in the first three: the second, third, and fourth have their outer webs also sinuated. The *tail* is slightly rounded. The *tarsi*, which are strong and about two inches long, are feathered on the anterior surface only to the extent of half an inch below the joint: elsewhere they are covered by small rounded, subangular, tiled scales, of which the anterior ones are rather the largest. The *toes* are separated to their bases, and are, with their claws, nearly equal to each other in size, and shorter than the tarsi. The fore toes are protected above by three large transverse scales adjoining to the claws, succeeded by one or two pairs of smaller scales. Four large scales cover near the whole of the hind toe. All the claws are rounded beneath, the middle one alone having a nearly obsolete groove on its inner side; they are black, tapering, sharp-pointed, and much curved. The soles and under surface of the toes are rough, like small-grained shagreen †.

* In a fine adult specimen before us, just received from New Jersey, the third quill is a quarter of an inch longer than the second, the fourth one inch shorter than the third; but the first and fifth are precisely of the above proportions. Sw.

† Each scale, in fact, is a small prickle, terminating in an *acute point*, perceptible to the naked eye, but very remarkable when viewed under a common lens; they then present a miniature resemblance to the thorny processes on the backs of Skates and similarly formed fish. Sw.

DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	24	0	Length of the longest quill feather	17	0
,, of the bill from the angle of the mouth	1	6	,, of the tarsus	2	0
,, of the bill measured along the curve of its ridge	2	0	,, of the middle toe	1	6
			,, of each of the claws in a straight line	1	0
			,, of ditto, following their curvature	1	7

The *old female* is about two inches longer than the male, has less white on the head, and some brown spots on the breast.

An *immature* bird differed from the preceding in all the wing coverts being tipped with rusty-white, in the feathers of the top of the head having large oblong brown marks in their centres, in the breast being spotted with brown rhomboidal marks, and in there being some brown spots on the flanks.

[7.] 1. FALCO PEREGRINUS. (Linn.) *Peregrine Falcon.*

GENUS. Falco. LINN. AUCTORUM.
Spotted Hawk. (*Falco maculatus.*) EDWARDS, i., pl. 3. Male, from Hudson's Bay.
Black Hawk. (*Falco niger.*) IDEM, i., pl. 4. Female, from Hudson's Straits.
Peregrine Falcon. PENN. *Arct. Zool.*, ii., p. 202, No. 97.
Falco Peregrinus. LATH. *Ind.*, i., p. 38, sp. 72.
Great-footed Hawk. (*Falco Peregrinus.*) ORD. *Wilson's Orn.*, ix., p. 120, pl. 76. Female.
Falco Peregrinus. SELBY. *Brit. Orn.*, i., p. 37, pl. 15. RICHARDS. *App. Parry's Sec. Voy.*, p. 342, No. 1. BUONAP. *Syn.*, p. 27, No. 9.
Apeestæ-kæoo. (*Little Eagle.*) CREE INDIANS.

This bold and active bird is a typical species of the "True Falcons," or, as they have been termed on account of their docility, the "Noble Birds of Prey." They are characterised by a short, strong bill, which is curved from the base, and is armed on each side, near the point, with an acute tooth, that fits a notch in the lower mandible. The cere is very short, and the nostrils are small circular openings, with a slender round pillar in the centre. Their wings are long and pointed, the first and third quill feathers nearly equalling the second, which is the longest of all. Baron Cuvier ascribes to this form of the wings the difficulty which the Falcons experience in ascending vertically, and the consequent necessity they are under of making a very oblique ascent in calm weather, or of flying against the wind when they wish to rise in the atmosphere during a breeze. On the other

hand, their length of wing fits them for a continuous flight, and enables them, when they have attained the weather gage, to shoot down on their prey with an almost unerring aim and the rapidity of lightning. Their tarsi are of medium length and are strong; and their toes, which are comparatively long, though sufficiently robust, are strengthened by a short membrane, which connects the first phalanges of the anterior ones, and is most conspicuous between the two outer ones. The claws are strong, sharp, and curved, and are well adapted to the mode in which these birds kill their prey, which is by a stroke of the foot. There are some prominent tubercles on the under surface of the toes, probably intended to act as cushions in preserving the toes in the proper degree of curvature when in the act of giving the stroke.

The European Peregrine Falcon, or, as it is termed provincially in England, the "Duck-hawk," "Haggard," or "Blue-backed Falcon," was held in high esteem as long as the art of falconry was cultivated, the female being most prized and employed against larger birds; while the male, from its being one-third smaller, was denominated a "tiercelet" or "tercel," and flown only at partridges and small game. The Peregrine is distinguished by ornithologists from the allied species, by the length of its wings, which, when folded, are as long as the tail; by its having the middle toe as long as the tarsus; and by its having a large black mark or whisker descending from under the eye, for an inch or more, along the side of the throat. In the young Peregrine this mark is less distinct, being made up of a number of spots; but it becomes darker and more conspicuous as the bird advances in age: whereas, in the closely resembling species, the Lanner, the whisker is narrow in the young bird, and vanishes entirely in the old one. It is only the first quill feather of the Peregrine that is strongly notched, near the point of the inner web. The European Hobby (*F. sub-buteo*) is an almost exact miniature resemblance of the Peregrine, which has not hitherto been found in America. The Peregrine being a rare bird in the wooded districts of the fur countries where the trading-posts are established, I did not procure a specimen on the late Expeditions; but I have frequently seen it whilst on the march across the barren grounds. Of the two specimens figured by Edwards, one was from Hudson's Bay, and the other was caught off the entrance of Hudson's Straits. Captain Parry likewise brought home several male and female specimens from the coast of Melville Peninsula, some of which are preserved in the British Museum. It is a summer visitor of the northern parts of America, and frequents the coast of Hudson's Bay and the Arctic Sea, with the barren grounds, but is very seldom seen in the interior. It preys habitually on the Long-tailed Ducks (*Anas glacialis*), which

breed in great numbers in the Arctic regions, arriving in June and departing in September. Captain Parry observed it, in his second voyage, following flocks of the Snow Bunting on the coast of Greenland, near Cape Farewell. It frequents the shores of New Jersey and Pennsylvania in the winter, and is celebrated there for the havoc it makes among the water-fowl. Mr. Ord states that the Ducks, which are struck by it, are lacerated from the neck to the rump: it gives the blow in passing, and returns to pick up its bird. Captain King appears to have found it at Port Famine, in the Straits of Magellan; so that it probably varies its hunting-ground with the season, from one extremity of the continent of America to the other. From the resemblance which the Peregrine has in voice and manners to the Ring-tailed Eagle (*F. chrysaëtos*), the Cree Indians distinguish it by the epithet of *Apeestæ-kæoo*, or Little Eagle.

DESCRIPTION

Of an old *male*, from Melville Peninsula, lat. 68° N.

Colour of the head and shoulders blackish-brown, without spots. The wing coverts and scapularies are also blackish-brown, but there are two or three narrower bars of hair-brown on each feather. The quill feathers are blackish, with faded tips; their inner webs are marked with about twelve transverse oval brownish-white spots; and on their under surfaces there are many alternate bars of white and slate-colour, the former being the broadest. The tail coverts are lead-grey, crossed by arrow-pointed, or heart-shaped marks of blackish-brown. The *tail* is barred alternately with blackish-brown and slate-colour, the subterminal band of the former being much broader than any of the others; the bars are very distinct on its under surface, where they are hair-brown and white. *Under surface.* The black whisker is large and well defined. The throat and upper parts of the breast are white, without spots; the rest of the under parts are white, with large longitudinal blackish-brown spots on the flanks, and small transverse ones on the belly. The under tail coverts are crossed by distant narrow bars, and the thigh feathers are more closely barred. *Bill* greenish-blue. *Cere* and naked skin round the eye gamboge-yellow. *Iris* yellow. *Legs* yellow. *Claws* black.

Form, &c.—*Bill* short and strong; upper mandible much curved, and armed with an acute tooth; lower mandible truncated at the tip, with a deep notch for the reception of the upper tooth. *Nostrils* round, with a central point. Space between the eye and bill covered with hair-like feathers. Eyebrow projecting; pupil large. When the *wings* are folded, their tips cross each other over the end of the tail. The second quill feather is the longest; the first is a quarter of an inch, and the third an inch shorter than the second; the fourth is nearly an inch shorter than the third; and the fifth and sixth are widely apart from each other, and from the fourth. The inner web of the first is strongly sinuated; the webs of the second and third are narrower towards their points, but present no abrupt sinuation: "Exterior edge of the tip of the secondaries scolloped." (Wilson.) *Tail* very slightly rounded. The *tarsus*, an inch and three-quarters long, is feathered half an inch below the joint anteriorly; the remainder,

and the bases of the toes, are reticulated. Part of the first phalanges, and all the other joints of the toes, are scutellated above. The middle *toe* is the longest; the lateral toes are next to it in length; and the hind toe is the shortest, but has the largest claw. The middle and outer toes are connected by a short membrane. The *claws* are strong, sharp, and much curved.

Dimensions
Of the *male*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	14	0	Length of the bill from the anterior margin of the orbit to its tip	1	3
,, of the bill, measured on the ridge	1	0	,, of the tarsus	1	9
,, ,, from the angle of the mouth	1	1½	,, of the middle toe	2	2
			,, of the middle claw	0	9

An *old female*, from the same locality, has the dorsal aspect more dull, and a buff-coloured breast, with some central dark streaks on the feathers. It is larger than the male.

Dimensions
Of the *female*.

Length (total)	18	0	Length of the middle toe	2	2
,, of the tarsus	2	4	,, of the middle claw	0	7

An *immature* bird, also from the same locality, has the feathers on the dorsal aspect narrowly bordered with a dull rust-colour, which, on the head, prevails over the blackish-brown. The *tail* is of a deep hair-brown, and is tipped with white, the outer webs being marked with seven round spots, and the inner ones with as many bars of a pale reddish-brown colour: there are no spots on the exterior web of the outer feather. The inner coverts of the wings, and under surface of the tail, are transversely barred with buff-colour. The whole ventral aspect is white, with a large oblong liver-brown mark in the centre of each feather. There are fewer spots on the throat, and more on the flanks, than elsewhere; but they are nearly of equal size on these parts and on the belly and thighs.

Dimensions
Of the *young* bird.

Length (total)	17	6	Length of the middle toe	2	3
,, of the tarsus	1	9	,, of the middle claw	0	9

[8.] 2. FALCO ISLANDICUS. (Latham.) *The Jerfalcon.*

GENUS. Falco. LINN. AUCTORUM.
Ash-coloured Buzzard. (*Buteo cinereus.*) EDWARDS, pl. 53. Young, from Hudson's Bay.
Falco fuscus. FABRICIUS. *Faun. Grœnl.*, p. 56. Young.
Falco sacer. FORSTER. *Phil. Trans.*, lxii., p. 383 and 423. Young, from Hudson's Bay.
Collared Falcon. PENN. *Arct. Zool.*, ii., p. 222, sp. G. Mature.
Gyrfalcon. IDEM, ii., p. 221, sp. F. Immature. *Brit. Zool.*, t. xix.
Iceland Falcon. IDEM. *Arct. Zool.*, ii., p. 216, sp. D. Immature.
Sacre Falcon. IDEM, ii., p. 202, sp. 96. Immature.
Dusky Falcon. IDEM, ii., p. 220. E. Immature.
Falco Islandicus. LATH. *Ind.*, p. 32, sp. 39. Mature.
Falco rusticolus. IDEM, p. 28, sp. 60. Mature.
Falco Gyrfalco. IDEM, p. 32, sp. 68. Immature.
Falco sacer. IDEM, p. 34, sp. 75. Immature.
Falco lagopus β. IDEM, p. 19, sp. 32 β. Yearling.
Falco obscurus. IDEM, p. 44, sp. 105. Immature.
Falco Islandicus. TEMMINCK, i., p. 17. SABINE, *Lin. Tr.*, xii., p. 528.
Hierofalco candicans. CUVIER, *Reg. An.*, i., p. 323.
Falco Islandicus. SELBY. *Brit. Orn.*, i., p. 35, pl. 14.
Peepooneeshew, (*Winter bird.*) CREE INDIANS.

This very handsome Falcon differs from the Peregrine, in having a longer tail, shorter and stronger tarsi and toes, and somewhat less pointed wings; but it is in all respects a *true Falcon*, and one of the most courageous, though Baron Cuvier has considered it as the typical species of his sub-genus *Hierofalco*. The want of a tooth on the upper mandible, which he gives as the principal character of the sub-genus, seems to be merely an occasional variety; for many specimens, both European and North American, are preserved in the Hudson's Bay, British, and other Museums in London, which have as large and acute a tooth as the Peregrine, although it is generally a little nearer the point of the bill than in the latter bird. Indeed, the bill of the Jerfalcon differs from that of the Peregrine, not in the want of a tooth, but in the presence of a perceptible obtuse lobe near the middle of the mandible; whilst in the Peregrine there is only a very slight indication of such a lobe. There is a solitary specimen of a Jerfalcon in the British Museum, whose bill is destitute of a tooth, agreeing perfectly with Buffon's figure and Cuvier's description; but, in all other respects, that specimen has the same form and stature as those whose bills are toothed.

The Jerfalcon is a constant resident in the Hudson's Bay territories, where it is known by the name of the "Speckled Partridge Hawk," or by that of the "Winterer." It is not enumerated by Wilson or Buonaparte amongst the birds of the United States, and I am unable to state the exact southern limit of its

range, though I have ascertained that it is occasionally seen as far south as latitude 52°. It is found northward to the coast of the Arctic Sea, and probably in the most northern Georgian Islands; it is a well-known inhabitant of Iceland, and was observed by Captain Sabine on the west coast of Greenland, as high as latitude 74°. It is likewise an inhabitant of the north of Europe.

We saw it often during our journeys over the "Barren Grounds," where its habitual prey is the Ptarmigan, but where it also destroys Plover, Ducks, and Geese. In the middle of June, 1821, a pair of these birds attacked me as I was climbing in the vicinity of their nest, which was built on a lofty precipice on the borders of Point Lake, in latitude 65½°. They flew in circles, uttering loud and harsh screams, and alternately stooping with such velocity, that their motion through the air produced a loud rushing noise; they struck their claws within an inch or two of my head. I endeavoured, by keeping the barrel of my gun close to my cheek, and suddenly elevating its muzzle when they were in the act of striking, to ascertain whether they had the power of instantaneously changing the direction of their rapid course, and found that they invariably rose above the obstacle with the quickness of thought, showing equal acuteness of vision and power of motion. Although their flight was much more rapid, they bore considerable resemblance to the Snowy Owl. At the period at which I saw them, the ground was still partially clothed with snow, and the lakes covered with ice; but the Jerfalcon, like the *Strix nyctea* of the same districts, is well calculated, from the whiteness of its plumage, for traversing a snowy waste, without alarming the birds on which it preys. As the Ptarmigan partially migrate southwards in the winter, some of the Jerfalcons follow them; but, from the young birds being much more common, about latitude 57°, than the mature ones, the latter probably keep nearer to their breeding-places in the more northern, rocky, barren ground districts all the year. When the Jerfalcon pounces down upon a flock of Ptarmigan, the latter endeavour to save themselves by diving instantly into the loose snow, and making their way beneath it to a considerable distance.

DESCRIPTION

Of a *mature* bird (supposed to be a *male*) from Hudson's Bay, in Mr. Leadbeater's collection.

Colour.—White, with some clove-brown spots on the dorsal aspect. The head is entirely white, and the neck is nearly so, there being only a few central brown marks on the feathers of the nape. On the back the clove-brown forms a pyriform blotch on each feather, and on the rump it is confined to a narrow streak along the shaft. The spots are smaller on the lesser wing-coverts; and on the greater coverts, secondaries, and scapularies, the brown

is disposed in bars, which do not reach the margins of the feathers. The primaries are white, their shafts, and one or two inches of their ends only, being blackish-brown; they are narrowly edged at the tips with white. The tail feathers and their coverts are entirely white. The whole under surface of the bird is pure white, except the ends of the quill feathers, which are hair-brown. The *bill* is pale greenish-gray, becoming darker at the tip. *Cere* and lores wax-yellow. *Legs* yellow.

Form, &c.—*Bill* short, strong, and much curved. The upper mandible has a rather narrow ridge; its cutting margin is undulated, having an acute tooth near its point, and an obtuse lobe posterior to it. The under mandible is truncated at the tip, and deeply notched on its cutting margin, for the reception of the upper tooth. The *nostrils* are round, with a central pillar. The *cere* and lores are mostly covered with small white hairs and feathers, arranged in a radiated manner. The *wings* are shorter than the tail; the second quill feather is the longest; the third is a quarter of an inch, and the first half an inch shorter than the second; the fourth is half an inch shorter than the first, and more than an inch shorter than the second; the remainder diminish in succession an inch each. The first and second have their inner webs sinuated, and the outer webs of the second and third are also sinuated. The *tail* is nearly square. The tips of the thigh feathers reach to the roots of the toes. The *tarsus*, rather more than two inches and a quarter long, is feathered for an inch and three quarters; its lower part being reticulated with crowded scales. The *toes* have their first phalanges reticulated, and the others protected above by large transverse scales. There is a short web between the outer and middle toes. The hind toe is shorter than the others, and is armed with the longest nail; the inner toe and nail are next in size: the outer toe is rather longer and more slender than the inner one, and has the smallest nail of all; the middle toe is half an inch longer than these; its nail being a little bigger than the outer one. All the nails are strong, sharp, much curved, and grooved beneath.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	24	0	Length of the bill from the angle of the mouth	1	6
„ of the tail	10	0	„ of the tarsus	2	4
„ of the longest quill feather	15	0	„ of the middle toe	2	0
„ of the bill, measured along its ridge	1	3	„ of the middle claw	0	9

The *young* Jerfalcons show little white on their plumage, being mostly of a dull brown colour above. As they grow older, the white margins encroach on the brown, which becomes merely a central blotch, indented on each side by the white; while in aged birds the plumage is mostly pure white, varied only by a few narrow transverse brown bars on the upper parts. Specimens are occasionally procured totally white; but whether they ought to be considered as birds in the most perfect state of plumage, or merely as varieties, I have not been able to ascertain.

DESCRIPTION

Of an *immature* bird from Hudson's Bay, now in the British Museum.

Colour of the head white, with longitudinal brown streaks. The feathers on the dorsal aspect of the body have hair-brown centres, with white borders, and also an oval spot on each web indented into the brown. The tail feathers have brown shafts; in the two outer feathers the brown encroaches on the webs, and in the two middle ones there are also six or seven irregular brown blotches. The breast and belly have elliptical brown marks in the centres of the feathers. In other respects, and in the acute tooth on the upper mandible, the specimen resembles the mature one above described.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length (total) . . .	22	6	Length of the largest quill feather .	14	0
,, of the tail . . .	8	0	,, of the tarsus . . .	2	4

The *Falco sacer* of Forster, sent from Hudson's Bay, and described in the *Philosophical Transactions*, is a still younger bird than the preceding, probably a *yearling*.

Its upper plumage was dark brown, with pale reddish-brown margins and spots on the webs, which did not reach the shafts. The quill feathers were brownish-black, with white tips and edges, round rust-coloured spots on the outer webs, and transverse bars of the same colour on the inner webs. The tail was dark brown, with a white tip, and crossed by about twelve white bands. The head and whole under surface were white, with longitudinal brown marks. *Cere* and feet bluish. *Iris* yellow. Its length was 22 inches; its extent 36 inches, and its weight 2½ lbs.

The description of Edwards's *Ash-coloured Buzzard* corresponds nearly with Forster's, but the colouring of his figure is indifferent.—R.

The remarkable variation in the form of the bill, before alluded to, deserves attention; since naturalists have given no elucidation of a fact so curious. It has, indeed, been surmised, that *two* species may possibly exist in our museums under this name; but on this point we can offer no opinion. Several instances, however, might be named, where the variation in the bills of individuals (unquestionably of the same species) is fully as great as in the present instance. This fact may be accounted for in two ways; first, from the effect of age, the young not having the full development of that structure which is typical of the adult; thus, in the youngest specimen of the American Harrier, subsequently described, the cutting margin of the upper mandible is straight, while in the older specimens this margin is strongly sinuated. Secondly, by that wonderful regularity in the progression of natural affinities, which is not only apparent in species, but even in the *mode of variation of those species*. Sometimes these resemblances indicate analogies,

sometimes affinities; but as the fact has hitherto not been clearly observed, so the principle of this variation remains to be discovered. It is generally seen in aberrant groups; although not unfrequently, as in this instance, in such as are strictly typical. To cite another instance, we may remark, that in the superb collection of Indian birds at the Royal Museum of Paris, are several skins of *Timalia pileata*, Horsf., from Sumatra and Java; of which some have the bill perfectly entire, some slightly, and others distinctly notched; all, apparently, being old birds, full plumaged, and not differing in the slightest degree in other respects. It will subsequently be seen that this species stands in a group where the bill is *either notched or entire* *.—Sw.

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[9] 3. FALCO SPARVERIUS. (Linn.) *Little Rusty-crowned Falcon.*

GENUS. Falco. LINN. AUCTORUM.
Little Falcon. PENN. *Arct. Zool.*, ii., p. 211, No. 110.
Falco sparverius. LATH. *Ind.*, i., p. 42, sp. 99.
American Sparrow-hawk. (*F. sparverius.*) WILSON, ii., p. 117, pl. 16, f. 1. Female; and iv., p. 57, pl. 32, f. 2. Male.
Falco sparverius. BUONAP. *Syn.*, p. 27, No. 10. VIGORS. *Zool. Journ.*, No. xi., pp. 425, 435.
Peepeekeeshees. CREE INDIANS.

PLATE XXIV. MALE.

Prince Charles Buonaparte has separated the small American Falcons from the larger kinds, characterising the group by wings shorter than the tail, and scutellated tarsi. The latter character is only partially correct; for, in *F. sparverius*, there are but three *shield-formed* transverse scales on the tarsus adjoining to the toes, the rest of it being covered anteriorly by two rows of scales in alternate order, forming a near approach to reticulation. In *F. æsalon* the tarsus is still more reticulated, but it also is furnished with three shield-formed scales on its lower extremity. The group, however, seems to be a natural one, the birds composing it differing somewhat in their manners from the larger Falcons, and having analogies in their habits with the Shrikes. The three small American Falcons that came under our notice agree in having long tails, and in the first quill feather being a little shorter than the fourth, or, at most, only equal to it,—both being considerably shorter than the second, which, again, scarcely exceeds the third one. The rapidity with which the quill feathers decrease in length after the fourth, still renders the wings pointed, yet not so much so as in the two larger species which we

* The whole of the groups in this family require a thorough revision, not in the library, but in the museum; and until this is done, it is impossible to make full use of the distinction pointed out by Baron Cuvier, or to understand its bearings.—Sw.

have described. The *F. sparverius*, though a smaller bird, may be considered as representing the *F. tinnunculus* of Europe in form. We met with no small Falcons, in the northern parts of America, having long wings, like the Hobby and some other European species.

The *Falco sparverius* is a common bird in America, and its manners are well known. Indeed, few Falcons are more likely to attract attention, for it is not only a bold and familiar species, but both male and female are very beautiful birds. Wilson informs us that it is a constant resident in almost every part of the United States, particularly north of Maryland. It breeds in considerable numbers on the banks of the Saskatchewan, in the neighbourhood of Carlton House, arriving there in the month of April, laying its eggs about the middle of May, and retiring southward on the approach of winter. I am unable to say how far it extends its migrations; but I do not believe it to be a very northern species, as it was not observed, on the route of the Expeditions, beyond the fifty-fourth degree of latitude. It also frequents the warmer parts of America, having been perceived in Cuba by Mr. W. M'Leay; and it is likewise an inhabitant of South America *, Captain King having found it at Port Famine in the Straits of Magellan †. Wilson has described its manners with his wonted accuracy, and I cannot do greater justice to the reader than by transcribing his remarks.

"It flies rather irregularly, occasionally suspending itself in the air, hovering over a particular spot for a minute or two, and then shooting off in another direction. It perches on the top of a dead tree, or pole, in the middle of a field or meadow, and, as it alights, shuts its long wings so suddenly, that they seem instantly to disappear. It sits here in an almost perpendicular position, sometimes for an hour at a time, frequently jerking its tail, and reconnoitring the ground below in every direction, for mice, lizards, &c. It approaches the farm-house, particularly in the morning, skulking about the farm-yard, for mice or young chickens, and frequently plunges into a thicket after small birds, as if by random; but always with a particular, and generally a fatal, aim."

In the vicinity of Carlton House, where the plains are beautifully ornamented by numerous small clumps of aspens, that give a rich picturesque effect to the landscape, which I have never seen equalled even in an English park, this small Falcon was frequently discovered perched on the most lofty tree of a clump, sitting with his eye apparently closed, but, nevertheless, sufficiently awake to what was passing around it, as it would occasionally evince by suddenly pouncing upon any small

* The specimens we procured during our researches in Brazil are entirely destitute of the rufous spot on the crown; but those from Mexico perfectly agree with the skins brought home by Dr. Richardson.—Sw.

† Vide *Zool. Jour.*, No. xi., pp. 425, 435.

bird that happened to come within its reach. It is the least shy of any of the American hawks, and when on its perch will suffer the fowler to advance to the foot of the tree, provided he has the precaution to make a slow and devious approach. He is not, however, unnoticed; for the bird shows, by the motion of its head, that it is carefully watching his manœuvres; yet, unless he walks directly towards it, it is not readily alarmed. When at rest, its wings are closely applied to the sides, with their tips lying over the tail about one-third from its end, and the tail itself, being closely shut up, looks long and narrow. If its suspicions be excited, it raises and depresses its head quickly two or three times, and spreads its tail, but does not open its wings until the instant it takes flight. The individuals shot at Carlton had mice or small birds in their stomachs. Wilson enumerates, also, snakes, lizards, and grasshoppers, as part of its food. It is said to make its nest in a hollow tree, and to lay four or five eggs, which are of a light brownish-yellow colour, spotted with a darker tint *.

DESCRIPTION

Of a *male*, in full plumage, killed in the vicinity of Carlton House, lat. 53°, May, 1827.

Colour.—The crown of the head is occupied by a circular patch of deep orange-brown, which is enclosed by a coronet of clear blackish-grey. Beneath this there are seven conspicuous black marks; one situated on the nape of the neck, and blending with the grey coronet, and three on each side of the head below the level of the eye: the two anterior of these marks form together almost two-thirds of a circle, which includes the white cheek; and the third and smaller one, situated farther back, is surrounded by a pale-brown tint. There is a narrow white line between the forehead and the base of the bill, and another over the eye.

The dorsal aspect of the neck, the back, and the scapularies, are of a clear-brown colour, considerably paler than the crown of the head; and on the tips of the scapularies and between the shoulders there are a few oval spots and transverse bars of black. The rump and tail coverts are of a brighter and purer orange-brown than the crown of the head, and, like the neck, are unspotted. The *tail* feathers are precisely of the same colour with their coverts; but a subterminal band of black crosses both webs, and they are narrowly tipped with white: the exterior feather has a white outer web, with an undulated black line along its shaft; and there is a narrower interrupted black bar behind the subterminal one on the other feathers. The lesser wing coverts and the secondary coverts are pure bluish-grey, regularly marked with round spots about the size of peas. The bastard wing and the primary coverts are marked alternately with black and bluish-grey. The quill feathers are brownish-black, with black shafts, and on their inner webs there are from five to eight semi-oval white marks, regularly alternating with narrower processes of the black. A square black patch is formed by the bases of the outer webs of the secondaries being of that hue: their tips are bluish-grey

* Wilson, ii. p. 118.

clouded with black, and their inner webs are barred with white like the primaries. The tertiaries are bluish-grey, with some black. *Under surface.* The throat, posterior part of the belly, under tail coverts, and thigh feathers, are pure white, without spots. The breast has a brown tinge. The flanks and sides of the breast are marked prettily with roundish and heart-shaped black spots. The linings of the wings and under surface of the quill feathers are white, the former spotted with black and the latter barred with lead-grey. The tail is pale-buff colour beneath, with dark marks corresponding to those on the upper surface. *Bill* bluish-grey, with a blackish tip; lower mandible horn-coloured at the base. *Cere* yellow. *Iris* dark-brown. *Legs* yellow. *Claws* black.

Form, &c.—The *bill* is short, strong, convex on its sides, much curved, and very acute. Just anterior to the nostrils there is a slight undulation of the cutting margin of the upper mandible; and half way between that and the tip there is an acute tooth, which fits into a notch in the lower mandible: the latter is strong and truncated at the tip. The cere is very short, and the nostrils are circular, with a central column. The *wings* are much pointed, the primaries greatly exceeding the secondaries in length. In some specimens the second, in others the third, quill feather is the longest; the first is three-quarters of an inch shorter than these, and in most specimens is perceptibly shorter than the fourth; the remaining feathers are each in succession half an inch shorter. The second and third have their outer webs sinuated; and the inner webs of the first and second are also sinuated. All these sinuations are shallow and oblique, though that on the inner web of the second feather is less so than the others. The *tail* is moderately rounded, the outer feathers being half an inch shorter than the central ones. The *tarsus* is pretty strong, considering the size of the bird. It is covered with short white feathers, on its anterior surface only, for nearly half an inch below the joint; the remainder of it is protected anteriorly by a double row of scales larger than those behind, and by a single row of three large transverse oval ones immediately adjoining the articulation of the middle toe. The middle toe is about two-thirds of the length of the tarsus; the others are about a quarter of an inch shorter than the middle one. Under each joint there is a conspicuous round cushion, covered with warty integument, like the rest of the under surface of the foot. The claws are much curved, and are grooved underneath with acute edges.

Dimensions

Of the *male*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	11	6	Length of the bill from the angle of the mouth	0	8½
,, of the tail	5	6	,, of the tarsus	1	5
,, of the longest quill feathers	6	6	,, of the middle toe	0	11
			,, of its claw	0	4

DESCRIPTION

Of a *mature* female, killed May, 1827, at Carlton House.

Colour of the head nearly the same as in the male, the seven black marks being equally conspicuous; the rust-coloured mark on the crown, however, and its surrounding coronet, are varied by the shafts of the feathers being blackish. The whole *dorsal aspect* is reddish-brown, duller than the corresponding parts of the male, and regularly crossed by brownish-

black bars, several on each feather. There are twelve black bars on the middle tail feathers, and nine on the outer ones; and the outer webs of the latter are nearly white. The flag feathers are coloured externally, as in the male; but the white marks on their inner webs are deeply tinged with brown. The throat, posterior part of the belly, and under tail coverts, are white, as in the male; the breast, fore part of the belly, and the flanks, are soiled-white, marked longitudinally with oblong yellowish-brown spots. On the linings of the wings the yellowish-brown is the ground colour, and is spotted with white. The under surfaces of the quill and tail feathers are slightly tinged with buff-colour, and are crossed by brownish-grey bars.

The total length of the specimen is one foot; that of the tarsus one inch and a half: the other dimensions correspond with those of the male, the female of this species scarcely exceeding the other sex in size.

A *young male* had nearly the plumage of the female, differing only in the black bars on the wings being more distinct, those on the tail narrower, and in the upper tail coverts being brownish-red, without spots.

In a *young female* the tips of the flag feathers were margined with white and the whole abdomen was marked with yellowish-brown spots.

[10.] 4. FALCO COLUMBARIUS. (Linn.) *Pigeon-Hawk.*

GENUS. Falco. LINN. AUCTORUM.
Falco columbarius. FORSTER. *Phil. Trans.*, lxii., p. 382, No. 1.
Pigeon-Hawk. PENN. *Arct. Zool.*, ii., p. 222, No. 111.
Falco columbarius. LATH. *Ind.*, i., p. 44, sp. 106.
Pigeon-Hawk. (*F. columbarius.*) WILSON, ii., p. 107, pl. 15, f. 3. Male.
Falco columbarius. BONAP. *Syn.*, p. 38, No. 11.
Pepecooseesh. CREE INDIANS.

This fierce little Falcon makes it appearance on the coast of Hudson's Bay in May, and, having reared its young, retires to a warmer climate in September. It is not uncommon about York Factory, in latitude 57°, and probably wanders much farther north. Early in the spring of 1825, I observed a small Hawk on the north shore of Great Bear Lake, in latitude 66°, which, if not of this species, belongs to a still smaller one, that is hitherto undescribed as a North American bird. It had taken possession of a tree, and was so unwilling to go away, that, when I threw stones at it, it merely made two or three circles round my head, with much clamour, and returned to its former perch. The want of a gun at the time prevented me from procuring the specimen.

Wilson observes, that the Pigeon-Hawk is generally migratory in the northern and middle parts of the United States, arriving in Pennsylvania early in the spring, extending its migrations to Hudson's Bay, and, after building and rearing its young, retiring to the south early in November. Mr. Hutchins, in his Notes on the Hudson's Bay Birds, informs us, that this species "makes its nest on the rocks and in hollow trees, of sticks and grass, lined with feathers, laying from two to four white eggs, thinly marked with red spots. The young fly in August. It preys on small birds, which it seizes with dexterity, screaming loudly at the onset; and when it is disturbed, it will fly round and round, making a continued noise."

DESCRIPTION

Of an individual killed at York Factory on the 4th September, 1822, supposed to be a *male*.

Colour of the head brownish-black, with reddish-brown margins to the feathers. The whole dorsal aspect is deep broccoli-brown, slightly varied by dark chestnut-brown edgings to the feathers, which are scarcely noticed at first sight, and are most perceptible on the lesser wing coverts. The tail coverts have paler margins, approaching to wood-brown. The *tail* is black, crossed by four yellowish-grey bars, tinged here and there with brown, and tipped with the same. The inner webs of the bastard wing and quill feathers are marked by five or six large oval spots of yellowish-grey, more or less tinged with brown. *Under surface.* The cheeks, a streak above the eyes, the throat, breast, belly, and thighs, have a dull ochre-yellow, or yellowish-brown colour, spotted and streaked with brownish-black. The latter colour forms a large oval mark in the centre of each feather on the breast; but on the belly and thighs it is confined to a streak along the mid-rib. The linings of the wings are ochre-yellow, spotted with black; the under surfaces of the quill and tail feathers are deep clove-brown, crossed by rows of oblong, wine-yellow spots. *Bill* yellowish-grey at the base, bluish-black at the tip. *Cere* wax-yellow: inside of the mouth bluish; margins of the eyelids yellow. *Legs* yellow.

Form, &c.—*Bill* shaped like that of the preceding species. The tips of the folded *wings* reach within an inch of the end of the tail, the scapularies are short, and the secondaries and tertiaries reach to the tips of the tail coverts. The third quill feather is the longest, the second is almost as long, and the others in succession are considerably shorter. The *tarsi* are feathered anteriorly for a short way below the joint. The *toes* are long, with rounded cushions beneath the joints, and sharp curved nails. When the leg is stretched out, the tip of the middle claw reaches to the point of the folded wing.

Dimensions.

	Inches.	Lines.
Length from the tip of the bill to the end of the tail	11	0
,, of the tail	5	6
Extent between the tips of the wings	22	0

The specimen from which the above description was taken was not brought home, having been accidentally destroyed. The description accords nearly with Pennant's, quoted above.

FALCO ÆSALON, *jun.*

London Printed for John Murray Bookseller to the Admiralty 32 Albemarle Street

[11.] 5. Falco æsalon. (Temminck.) *The Merlin.*

Genus. Falco. Linn. Auctorum.
Dubious Falcon. Penn. *Arct. Zool.*, ii., p. 213, No. 112?
Falco æsalon. Temm., i., p. 27. Selby. *Brit. Orn.*, i., p. 45, pl. 18.

Plate xxv. Female.

This bird is known to the native inhabitants of the fur-countries by the same name with the two preceding ones; and we suspect that its similarity, in certain states of plumage, to the Pigeon-Hawk, has caused them to be confounded even by systematic writers. Hence we have been unable to quote with confidence any figures or descriptions of American specimens; and the same cause renders it difficult to ascertain the extent of its migrations on that continent. A single pair were seen in the neighbourhood of Carlton House, in May, 1827, and the female was shot. In the oviduct there were several full-sized white eggs, clouded at one end with a few bronze-coloured spots. Another specimen, probably also a female, was killed at the Sault St. Marie, between Lakes Huron and Superior, but it could not be preserved. It is a larger bird, and has longer toes, than the *Falco sparverius*.—R.

The specimen killed at Carlton House is, beyond doubt, an old female Merlin, just beginning to have its new feathers, several of which, darker and more cinereous, are to be seen on the sides near the hind part of the neck.—Sw.

DESCRIPTION

Of an *old female*, killed on the plains of the Saskatchewan, 14th May, 1827, while flying in company with the male.

Colour of the dorsal aspect dull, dusky yellowish-brown, varied by spots and short transverse bars of dull wood-brown. On the crown of the head the feathers have a central streak of blackish-brown, gradually fading into liver-brown towards the margins, which are rust-coloured, but are much worn off. On the upper part of the neck the plumage is lighter, and the white bases of the feathers appear. On the back, and on the wing and tail coverts, the wood-brown forms one or two pairs of roundish, ill-defined spots on each feather: on the scapularies it exists in the form of transverse bars, interrupted at the shafts. The quill feathers have from five to seven pairs of wood-brown spots, those on the outer webs being small, irregular, and situated close to the shafts. The ground colour of the *tail* is paler and duller than that of the back, except at its end, where it approaches to liver-brown. It is narrowly tipped

with soiled-white, and is crossed by five narrow bars of the same colour, of which the subterminal one is the most perfect. *Under surface.* The throat is white. The cheeks, sides of the neck, and breast, are brownish-white, streaked longitudinally with dark liver-brown. The belly and thighs are white, with yellowish-brown streaks on the shafts. The flanks and wing linings are yellowish-brown, with oval white marks. The quill feathers are barred alternately on the inside with broccoli-brown and wine-yellow. The under tail coverts are white, and the under surface of the tail is slate-coloured, crossed by white bars. *Bill* bluish-black. *Claws* black.

Form.—Shape of the *bill* much like that of *F. sparverius.* The cutting margin of the upper mandible has a strong tooth near its tip, and is somewhat sinuated farther back. Lores covered with white hair-like feathers, disposed in a stelliform manner. The tips of the folded *wings* reach within two inches of the end of the tail. The scapularies are short. The tertiaries, or the posterior secondaries, are longer than the six preceding ones, and are equal to the seventh or eighth primary. The wings have a pointed form: the second and third quill feathers are the longest; the first is about half an inch shorter than these, and is scarcely equal to the fourth; the succeeding ones, to the eleventh, are successively shorter by half an inch each. The outer webs of the second and third are rather suddenly narrowed near their tips, and the inner webs of the first and second are more decidedly sinuated. The *tail* is square. The outside thigh feathers reach only half way down the tarsus. The *tarsus* is covered anteriorly with feathers for nearly half an inch below the joint: it is protected at its base by four transverse shield-shaped scales, and is reticulated elsewhere. The *toes* are long and slender, particularly the middle one, and there is a roundish pad under each joint. The hind toe is the shortest, but has the longest claw; the inner fore toe comes next to it in length and in the size of its claw. The bases of the middle and outer toes are connected by a short web.

Dimensions
Of the *female.*

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	14	0	Length of the bill along its ridge	0	9
,, of the tail	6	0	,, of the tarsus	1	5
,, of the longest quill feather	7	6	,, of the middle toe	1	5
,, of the bill, from the angle of the mouth	0	9	,, of its claw	0	6
			,, of the hind toe	0	6
			,, of its claw	0	6½

I have had no opportunity of taking a description of an American *male* specimen.

1828.

[12.] 1. Accipiter (Astur) palumbarius. *The Goshawk.*

Genus. Accipiter. Antiq. *Sub-genus.* Astur. Bechstein.
Goshawk. Penn. *Arct. Zool.*, ii., p. 204, No. 99. Young male.
Gentil Falcon. Idem, ii., p. 203, No. 98 ? American female.
Falco palumbarius. Lath. *Ind.*, i., p. 29, sp. 65. Male.
Falco gentilis. Idem, i., p. 29, sp. 66 ? * Female or young.
Ash-coloured or Black-capped Hawk. (*F. atricapillus.*) Wilson, vi., p. 80, pl. 52, f. 3.
Falco palumbarius. Sabine. *Frankl. Journ.*, p. 670. Bonap. *Syn.*, p. 28, No. 12.

Plate xxvi. Male.

The Hawks are allied to the true Falcons by their habits of taking their prey on the wing, feeding on warm-blooded animals, and rejecting carrion; but differ from them in attacking their prey sideways, or obliquely, and near the earth, instead of soaring aloft and pouncing down upon it. They are characterized by the shortness of their wings, which reach no further than two-thirds down the tail. Their bills are curved from the base, but, being less convex on the sides, are not so strong nor so compact as those of the true Falcons; and they have a larger cere, and nostrils of a different form. They likewise want the notch on the lower mandible, and the corresponding tooth on the upper one; having, in place of the latter, an obtuse lobe, or festoon of the margin, situated farther back than the tooth usually is.

The Goshawk of the Old World was held in great esteem while falconry continued to be cultivated, and was flown at crows, geese, pheasants, and partridges. Colonel Thornton thus describes its mode of attack:—"The Goshawk flies at the bolt, the female being excellent for hares, rabbits, herons, and wild ducks, and the tercel for game. It takes its prey near the ground (for it cannot mount), and has great speed for a short distance. If its game take refuge, there it waits patiently on a tree or a stone, until the game, pressed by hunger, is induced to move; and as the Hawk is capable of greater abstinence, it generally succeeds in taking it." "I flew a Goshawk," says the Colonel, "at a Pheasant, which got into cover, and we lost the Hawk; at ten next morning the falconer found her, and just as he had lifted her, the Pheasant ran, and rose †."

* The Prince of Musignano observes, that the *Falco gentilis* of Linnæus, though by most authors considered to be the young of the Goshawk, corresponds also with his *F. Cooperii* in description, that bird having similar plumage to the young Goshawk.

† Montagu, *Orn. Dict., Suppl.*, Art. *Hawk-Gos.*

The American Goshawk was considered by Pennant and Latham to be of the same species with the European one; the former author merely remarking, that the American individuals that he had seen were of an unusually large size. Wilson, who had never seen an European Goshawk, described an old male that was shot near Philadelphia under the name of the "Black-cap Hawk, or *Falco atricapillus*;" observing, however, that his specimen corresponded so nearly with Bewick's description and figure of the Goshawk, that he had little doubt of their being identical. The Prince of Musignano has reunited the Black-cap Hawk with the *Falco palumbarius;* but Baron Cuvier, while he considers the latter as a typical specimen of his sub-genus *Les autours*, refers the American bird to another sub-genus, *Hierofalco*. There is, indeed, much resemblance between the females and young of the Goshawk and Jerfalcon; and those who overlook the differences in the scales of their tarsi and the relative lengths of their quill feathers, might easily confound the one with the other. That this has been done occasionally is very likely; and Cuvier may possibly be right in referring the *F. gyrfalco* of Gmelin to the *F. palumbarius*, although we have followed the majority of systematic writers in considering it to be the young of the *F. islandicus*.—R.

We associate this bird with the sub-genus or section of *Astur:* for although its approximation to the *Buteo borealis* is very decided, we shall not disturb the present situations of these two birds, remote as they now are in our systems, until the whole family undergoes a more accurate investigation. The bill, possessing all the characters seen in *B. borealis*, is yet somewhat shorter, but the upper mandible is less sinuated. These two species further agree in the length and general construction of their feet, excepting that in the *Accipiter palumbarius* the anterior scales partake of the smooth character more peculiar to the typical Hawks. The toes, also, are rather longer, the claws somewhat more curved, and the middle and outer toes are proportionably smaller than in *B. borealis*. It may further be remarked, that the anterior transverse scales of the toes are more numerous in this bird. The hind and inner claws are nearly of the same size, and very strong. The wings short, and not adapted for strong flight.—Sw.

DESCRIPTION

Of an *old male* (No. 1), shot in company with the female at the nest, on the plains of the Saskatchewan, May 8, 1827.

Colour.—The upper aspect of the head, the nape of the neck, cheeks, and sides of the throat, are black, with the white bases of the feathers partially appearing. A white stripe, with black shafts and mottlings, commences at the base of the bill, and, passing over the orbit, widens as it proceeds backwards to the side of the neck. The dorsal aspect of the neck, the back, the tail coverts, lesser wing coverts, and greater part of the secondaries, are bluish-

grey, without markings, the margins of the feathers being in some places merely a shade darker. The inner webs of the secondaries are yellowish-grey, with a little white mottling towards their bases. The primaries and their coverts have an umber-brown tinge, which, on the outer webs, yields a greyish reflexion, but towards the ends of the inner webs is nearly pure: a few bars are faintly indicated by lighter shadings, and there are some white markings towards their bases. The *tail* is clove-brown, deepening gradually towards its tip into blackish-brown, with two very obscure bars of the latter colour farther back; it is edged at the tip with soiled-white, and the inner webs are of a paler brown. The whole *ventral aspect* (including the thigh feathers and wing linings) has nearly an uniform appearance, being closely covered with short zig-zag lines of blackish-grey on a white ground. The long lateral under-tail coverts are white, without markings; but there are some greyish lines on the shorter central ones. The under surfaces of the quill feathers are clouded and mottled with brownish-white; and the tail beneath is slate-coloured, with brown shadings.

Form, &c.—*Bill* rather strong, curved from the base, but more compressed than the bills of the true Falcons, which proceeds from the greater flatness of its sides, for the ridge is rather obtusely rounded. Cutting margin of the upper mandible furnished with an obtuse lobe, the centre of which is under the anterior margin of the nostrils. Under mandible strong, and much rounded at the end. *Cere* moderately long, extending, on the ridge, to about one-fourth the length of the bill. *Nostrils* large, broadly oval, or nearly round, opening rather obliquely forwards. *Lores* clothed with short white feathers, on which black hairs are disposed in a stelliform manner, their ends curving upwards over the nostrils. The plumage on the dorsal aspect of the neck and between the shoulders is particularly full and close. The tips of the folded *wings* fall five or six inches short of the end of the tail, scarcely passing the longest tail coverts. The fourth quill feather is the longest; the fifth is two lines, the third a quarter of an inch, and the sixth an inch shorter; the second is intermediate between the sixth and seventh, which are an inch apart; and the first and eighth are about equal, and half an inch shorter than the seventh, or four inches shorter than the fourth. The outer webs of the second to the sixth inclusive, and the inner webs of the first to the fifth, are sinuated. The *tail* is rounded, the exterior feathers being three-quarters of an inch shorter than the middle ones. The thigh feathers are long. The *tarsi* are robust, clothed with mottled-grey feathers nearly half way down, and their lower portion protected by eleven transverse shield-shaped scales both anteriorly and posteriorly, all the scales being thin and smooth, but particularly the posterior ones, which causes them to appear as if united into one large scale. The *toes* are moderately strong, the middle one being more than half an inch longer than the others, which are nearly equal among themselves: there is a short web between the middle and outer ones. The hind toe is the most robust. The greater part of the outer toe, and the first phalanx of each of the others, are reticulated with small roundish scales both on their upper and under surfaces. The *claws* are very strong, much curved, acute, and grooved beneath; the hind one and inner fore one being much longer than the other two: the middle one has an acute inner edge.

Dimensions

Of *male* No. 1.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	24	0	Length of the bill along its ridge	1	3
,, of the tail	10	0	,, of the tarsus	2	9
,, of the longest quill feather	12	6	,, of the middle toe	1	9
,, of the bill, from the angle of the mouth	1	6	,, of the middle claw	1	0
			,, of the hind claw, following its curve	1	6

Another specimen (No. 3), which was killed in the woody country three or four degrees of latitude farther north than the preceding, may possibly be a *female*, *in very perfect plumage*, as it is of a much larger size. It strongly resembles the male above described, the colour of the dorsal aspect being merely less bright, the (four) blackish-brown bars across the tail more distinct,—the subterminal one being the broadest. The dark streaks on the under plumage are also a little broader and more general, and the grey zig-zag lines are darker and more numerous. The distal half of the first phalanx of the middle toe is covered above with broad transverse scales, instead of being reticulated as in male No. 1; in this respect agreeing with the female, No. 2, described below, though not with another and very similar specimen of unascertained sex, No. 4.

Dimensions

Of No. 3, sex not ascertained.

	Inches.	Lines.		Inches.	Lines.
Length (total)	23	0	Length of the tarsus	3	0
,, of the tail	11	6	,, of the middle toe	2	0
,, of the longest quill feather	14	0	,, of the hind claw	1	8

DESCRIPTION

Of a *female* (No. 2), killed at her nest, in company with No. 1 male.

Colour.—The prevailing hue of the dorsal aspect is dark liver-brown, relieved in some places by white, in others by pale wood-brown. On the head and back of the neck the liver-brown occupies the centres of the feathers, almost confined to the shaft at the base, but spreading out broadly at the tip: the wood-brown forms the margin, and the white a broad semi-elliptical lateral mark on each web. On the back the dark-brown, narrowly edged with white at the tip, is alone visible; but the feathers are dark-grey at the base, and are crossed in their middles by a concealed brownish-white bar. On the rump and lesser wing coverts the white is mostly replaced by wood-brown. The quill feathers and their immediate coverts present alternate bars of lighter and darker shades of liver-brown, with a few mottled white and brown spots on the outer webs and some larger ones on the inner webs partially occupying the place of the paler brown bars. The tail coverts are barred alternately with liver-brown and white, tinged and mottled with brown. The *tail* is crossed by five blackish-brown bars, separated by broccoli-brown spaces of greater breadth. These bars are bounded by

narrow interrupted white lines, and, on the outer feathers, the broccoli-brown is replaced by white mottled with brown. The ground colour of the *under surface* is white. The cheeks are streaked with liver-brown. On the neck and breast the brown marks have an oblong shape, and on the belly they are oval. The upper surface of the middle *toe* is scutellated from the middle of the first phalanx to the claw, and reticulated at the base. The *tail* is considerably rounded, its outer feathers being an inch and a half shorter than the middle ones. Some of the quill feathers in this specimen had moulted recently before it was killed.

DIMENSIONS

Of the *female*, No. 2.

	Inches.	Lines.		Inches.	Lines.
Length (total)	28	0	Length of the tarsus	3	2
,, of the tail	12	0	,, of the middle toe . . .	1	11
,, of the longest quill feather . .	13	6	,, of its claw	1	0

No. 4 is a specimen which was killed near Jasper's house, on the Rocky Mountains. Its sex was not ascertained, but its plumage is very similar to that of the preceding, though in a more perfect state. The tail is still more rounded, but the feathers composing it are individually more acute and have a white tip half an inch broad. The basal half of the middle toe is also more reticulated than that of No. 2, resembling in that respect male No. 1. The total length of this specimen is 29 inches.

DESCRIPTION

Of a specimen killed at York Factory, Aug. 14, 1822, supposed to be a *young* bird of that season. From the recent specimen*.

COLOUR.—General tints of the dorsal aspect blackish-brown and ferruginous. On the head the former colour forms an elliptical spot in the centre of each feather; on the wings and scapularies it occupies more space, the ferruginous tint being confined to a narrow border, and sometimes to an irregular streak across the feather. The quill feathers are liver-brown, slightly clouded with wood-brown. The tail is tipped with soiled-white, and has three or four broad, but distant, bars on a broccoli-brown ground. There is a slight intermixture of white on the tail coverts. The *under surface* of the neck and body and the linings of the wings are wood-brown, with elliptical black marks. Towards the vent the feathers are almost white, with black shafts. The under aspects of the quill and tail feathers are yellowish-grey, barred with brownish-black. *Bill* bluish-grey at the base, blackish at the tip: the cutting margin of the upper mandible slightly sinuated. *Cere* orange-coloured. *Eyelid* greyish. *Iris* sulphur-yellow. *Tarse* yellow. Length, 24 inches; extent, 43; length of the tail, 12 inches.

* This is the specimen noticed by Mr. Sabine in *Franklin's Journey*.

[13.] 2. Accipiter Pennsylvanicus. (Swainson.) *Slate-coloured Hawk.*

Genus. Accipiter. Antiq. Ray.
Slate-coloured Hawk. (*Falco Pennsylvanicus.*) Wilson, vi., p. 13, pl. 46, f. 1. Male.
Autour à bec sinueux. Temm. *Pl. col.* 67. Female. ?
Falco (Astur) velox. Bonap. *Syn.*, p. 29, No. 14.
Accipiter Fringilloides. Vigors. *Zool. Journ.*, iii., p. 436, No. 11. ?
Peepeequaisees. Cree Indians. (Monsonees.)

A specimen of this bird, killed in the vicinity of Moose Factory, and deposited by the Hudson's Bay Company in the Zoological Museum, enables us to enumerate it as an inhabitant of the fur countries, although it was not seen by any of the members of the Expedition in their several journeys. The admirable figure of Wilson is so perfectly characteristic of this Hawk, that we feel no doubt in considering our specimen as truly belonging to the same species. Less certainty, however, attends the synonyme here quoted of the *Planches coloriées* of M. Temminck; for the figure is either remarkably inaccurate, or it represents a bird very different from the female of *F. Pennsylvanicus*,—the tail being represented as distinctly rounded, whereas, in the species described by Wilson, the termination of all the feathers is perfectly even. The text, unfortunately, affords nothing to solve the question: should this be an error of the artist, the figure must be considered, not as "*le jeune de l'année*," as supposed by M. Temminck, but as a male of the second year, just assuming the adult plumage,—a fact sufficiently indicated by the figure, which represents some indistinct *transverse* bands on the breast. The females and males of the first year are marked with longitudinal stripes on all parts of the under plumage. Still greater doubts impede the right understanding of the *Accipiter fringilloides* of Mr. Vigors, whose description, minute in all that regards colour, is deficient in the three most material points which might have solved our difficulties; namely, the form of the tail, the relative proportion of the quills, and the comparative sinuosity of the upper mandible. So far, however, as this account goes, it might lead to the suspicion of its having been taken from a young male *A. Pennsylvanicus*, the "*frontis plumæ brunnescentes fusco striatæ*" being probably the indication of youth; while the measurements of the bill and tarsus sufficiently agree with those of our bird *. Yet the length of the wings, stated at only five inches, if not an error of the press or of transcription, consider-

* It is very desirable that authors should adopt one uniform mode of measurement, or at least explain their methods more accurately, until some definite plan is adopted.—Sw.

ably militates against this supposition. It is to be hoped that this respectable ornithologist will give an improved account of his *A. fringilloides*, that its true characters may be known. This is the more necessary from there being another *Accipiter*, inhabiting the extratropical latitudes of America, so completely resembling *A. Pennsylvanicus* in its immature plumage, or in the female dress, that the colours in both are precisely alike. It differs, however, from both *Pennsylvanicus* and *fringilloides* not only in being much larger, but in having the tail distinctly rounded, and the upper mandible of the bill much less festooned. We have hitherto seen only the female of this species; but the above characters may be advantageously employed to separate it from *Pennsylvanicus**. It was sent from Real del Monte, and is now in the possession of our friend, Mr. Taylor. Independent of the above distinctions, it is important to notice, that the anterior scales on the tarsus of *Pennsylvanicus* are entire, being, apparently, formed externally of one entire piece; whereas, in *Mexicanus*, the transverse divisions are distinctly visible. The particular structure of these parts in *fringilloides* has not been mentioned.—Sw.

DESCRIPTION

Of a specimen killed near Moose Factory, lat. 51°.

Colour of the upper plumage blackish-grey, brightening towards the rump into bluish-grey; all the shafts being black. There are several concealed large white spots on the scapularies. The bastard wings, primary coverts, and five first quill feathers, have a dull umber-brown colour, as if much worn: the succeeding five (new ones) have a shining blackish-brown tint, and the secondaries are nearly of the colour of the rest of the superior plumage. Deeper shades of colour form some obscure bars on the quill feathers, and there are six or seven large white marks on their inner webs. The tail has also a worn appearance, and it is crossed by several alternate bars of umber and wood-brown, and is tipped with white. The shafts of the flag and tail feathers are brown. *Under surface.* Throat white, with black shafts. Breast, belly, flanks, and thighs wood-brown, broadly barred with white. The linings of the wings are brownish-white, with transverse peaked brown spots. The bars on the under surface of the quill and tail feathers are very distinct. The under tail coverts are white. *Bill* and *claws* blackish. *Legs* yellow.

Form, &c.—*Bill* curved from the base, compressed, with a very distinct obtuse lobe on

* Accipiter Mexicanus. (Swainson.)

Sp. Ch.—Larger than *A. Pennsylvanicus*. Tail rounded, bill less sinuated. Length of the wing when closed, nine inches and a quarter. Inhabits Real del Monte, Mexico. The validity of this specific distinction must, nevertheless, depend upon an accurate examination of the *F. velox* of Wilson, to whose description the Mexican bird closely approximates. The size of *velox* appears smaller, being stated at thirteen inches, and the tail is "nearly even." Our bird is full seventeen inches, and the tail much rounded, the four outer feathers being graduated, and the outermost nearly three-quarters of an inch shorter than the middle feathers. We have not yet personally examined a specimen of *velox*, which Prince C. Bonaparte considers the female of Wilson's *Pennsylvanicus*; this supposition, however, is clearly erroneous.—Sw.

the cutting margin under the nostrils. *Nostrils* oval, longitudinal. *Wings* falling three inches short of the end of the tail. The fourth wing feather is the longest: the first is shorter than the secondaries *; the third to the sixth inclusive have their exterior webs deeply and abruptly sinuated; and the second to the fifth inclusive have their inner webs sinuated. The *tail* is long and emarginated at the end. *Tarsi* long and slender, feathered about half an inch below the joint, and covered elsewhere before and behind with large obliquely transverse scales, whose separations are scarcely visible. The middle *toe* is long and slender, being more than twice the length of the hind one or inner fore one: a web, extending half the length of its first phalanx, connects it to the outer toe. The *claws* are much curved, compressed, and very acute; the hind one and inner fore one are the largest.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the point of the bill to the end of the tail	13	0	Length of the bill measured along the ridge	0	7
,, of the tail	5	6	,, of the tarsus	1	10
,, of the longest quill feather	6	3	,, of the middle toe	1	3
,, of the bill, from the angle of the mouth	0	7	,, of its claw	0	4
			,, of the hind toe	0	6
			,, of its claw	0	6

—R.

DESCRIPTION

Of a *female* bird, sent from Real del Monte, and now in the collection of John Taylor, Esq., F.R.S., G.S., &c.

Bill, feet, and claws, as in the male.

Colour.—The general aspect of the upper plumage is grey-brown, the feathers on the back and wing coverts being slightly margined with pale ferruginous: those on the head and neck are white at the base and on their sides; while those on the crown are nearly black, with pale ferruginous sides. The ground colour of all the under plumage is white, each feather having a very lengthened and contracted tear-shaped spot down the middle: sides of the head, or ear feathers, striped in the same manner. *Throat* nearly white. *Thighs* white, each feather marked by a central transverse band, and a tear-shaped spot near the tip. The longest of the upper tail coverts white, each feather having two blackish-brown bands. The *tail* itself is grey, with four brown bands,—the whole of the feathers being precisely of an equal length. *Wings* reaching to one-third the length of the tail. Lesser quills greyish, banded with four somewhat lunulated blackish bands; inner margins white; greater quills with six bands. The fourth and fifth quills equal and longest; the second and seventh nearly equal. Tail and quill feathers beneath white, banded with three or four black bars.

Dimensions.

	Inches.
Length from the bill to the tail, about	$11\frac{1}{2}$
,, of the bill from the angle of the mouth to the tip of the upper mandible	$\frac{3}{4}$
Extreme length of the wings when closed	$6\frac{1}{2}$
,, tail from the root of the feathers to the tip	6
,, tarsus from the upper base of the hallux to the end of the bone	$1\frac{8}{10}$
,, ,, from the lower base of the hallux to the middle of the tarsal joint	$2\frac{1}{10}$

—Sw.

* The wing of the specimen being in a state of moult, the relative lengths of all the quill feathers cannot be ascertained.

BUTEO VULGARIS.

London, Printed for John Murray Bookseller to the Admiralty January 1st 1829.

[14.] 1. BUTEO VULGARIS. *Common Buzzard.*

GENUS. Buteo. BECHSTEIN.
Plain Falcon. PENN. *Arct. Zool.*, ii., p. 207, No. 103. ? Young female?
Falco obsoletus. LATH. *Ind.*, i., p. 28, sp. 61. ?

PLATE XXVII. MALE.

The Common Buzzard arriving in the fur countries in the middle of April, very soon afterwards begins to build its nest, and, having reared its young, departs about the end of September. It haunts the low alluvial points of land which stretch out under the high banks of a river, and may be observed sitting for a long time motionless on the bough of a tree, watching patiently for some small quadruped, bird, or reptile to pass within its reach. As soon as it espies its prey, it glides silently into the air, and, sweeping easily but rapidly down, seizes it in its claws. When disturbed, it makes a short circuit, and soon settles on another perch. One of our specimens had two middle-sized toads in its crop. It builds its nest on a tree, of short sticks, lining it sparingly with deer's hair. The eggs, from three to five in number, are equal in size to those of the domestic fowl, and have a greenish-white colour, with a few large dark-brown blotches at the thick end. The Common Buzzard is not mentioned by Wilson or Bonaparte as a North American bird. It was seen by the Expedition as far north as the fifty-seventh parallel of latitude, and it most probably has a still higher range. Pennant * states it to be an inhabitant of New York, Newfoundland, and Hudson's Bay; but as he refers to the Ash-coloured Buzzard of Edwards as a representation of his bird, it is probable that he had not seen an American specimen of the Common Buzzard. The toothed bill, round nostrils, tarsi half reticulated half feathered, general appearance, and the circumstance of its preying on the Willow Grouse, all point out Edwards's bird to be the *Falco Islandicus*, under which we have quoted it.—R.

The minor groups referred by ornithologists to this division of the family, have not hitherto been investigated; it would, therefore, be hazardous to offer any decisive opinion as to the type. In the subject of this article, the most common

* *Arct. Zool.*, ii., p. 207, No. 103.

example, the smallness of the head and bill is very remarkable; the sinuosity of the cutting margin of the upper mandible is rather more developed in the male than in the female; the second quill feather is slightly longer than the fifth, the third is equal to the fourth, or even exceeds it, and the first is intermediate in length between the seventh and eighth; the third and fourth are conspicuously longer than the rest;—a structure of wing which adapts this bird for more rapid flight than either the *Buteo borealis* or *Astur palumbarius*.—Sw.

DESCRIPTION

Of a *male*, shot, on the 17th of June, at the nest, which contained three eggs. Plains of the Saskatchewan.

Colour of the dorsal aspect between clove and blackish browns, the margins of the feathers being paler. The head and posterior part of the back are darker, while on the rest of the upper plumage the borders of the feathers fade gradually into soiled yellowish-brown. The quill feathers and longest scapularies have a shining blackish-brown colour; there are some obscure bars on the former, produced by a slight deepening of the colour, and at the base of the inner webs of the first and second quill feathers, these bars are slightly mottled with white. The secondaries and a few of the adjoining primaries are very narrowly tipped with brownish white. The *tail* is deep clove-brown, darkening towards its end into blackish-brown, and having a very narrow soiled tip. On a close inspection, it is seen to be crossed by about seven bars of a deeper shade, the terminal one an inch broad, the others much narrower. *Under surface.* The cheeks are pure clove-brown; the throat is white; the sides of the neck, its fore part next the breast, and the upper part of the latter, are dull broccoli-brown, with a slight intermixture of yellowish-brown. The belly and thighs are pale yellowish-brown, indistinctly barred with white. The vent feathers and under tail coverts are soiled white. The flanks are yellowish-brown, with some patches of clove-brown. The linings of the wings are brownish-white, with a few dispersed specks of yellowish-brown; and the greater interior coverts are barred with dark-brown. The under surfaces of the quill feathers are blackish-grey, deepening at their tips into blackish-brown, and barred towards the base of their inner webs with yellowish-grey. The tail beneath is very pale ash-grey, crossed by seven bars of clove-brown. *Bill* bluish-black. *Cere* and *legs* yellowish. *Claws* black.

Form, &c.—*Head* round, with a very convex crown. *Bill* broad at the base, flatly convex above, and much compressed towards the tip, which forms a rather slender acute hook. The curve of the ridge of the bill is elliptical. The cutting margin of the upper mandible is sinuated, and the lobe is rendered more distinct by a shallow and wide furrow on the side of the bill immediately anterior to it. The lower mandible is rounded, or very obliquely truncated, at the end. The *nostrils* are roundish, approaching to pear-shaped, with the narrow corner turned forwards and upwards. The *cere* covers a large portion of the bill, and is quite naked and exposed on its ridge, the feathers of the forehead lying smoothly back and receding from it: on the sides it is partially hidden by the black hairs which spring from the lores. *Wings.* The third quill feather is the longest, the fourth is nearly a quarter of an inch, and the second

an inch and a quarter shorter; the fifth is just perceptibly shorter than the second; the sixth to the tenth diminish an inch each in succession; and the first just exceeds the eighth. The inner webs of the first three are strongly sinuated, and the outer webs of the second, third, and fourth, more obliquely sinuated. The *tail* is very square, the two centre feathers being rather the shortest. The outer thigh feathers reach half way down the tarsus. The *tarsi* are short and strong, covered anteriorly with feathers for about an inch below the joint, naked their whole length posteriorly. They are protected before by about eleven large transverse shield-shaped scales, and there are about as many equally large behind, their sides being reticulated with small scales. The *toes* are short, the middle and outer one connected by a short membrane. The outer toe is a little longer than the inner one, the middle one is fully a quarter of an inch longer than the outer one, and the hind one is the shortest. There are four shield-shaped scales on the hind toe, four or five on the inner one, five or six on the outer one, and about twelve on the middle one; but there are some slight variations in different specimens.

Dimensions

Of a *male*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	22		Length of the bill, measured along its ridge	1	4
„ of the tail	8	6	„ of the cere on the ridge	0	6
„ of the longest quill feather	15	0	„ of the tarsus	2	6
„ of the bill from the angle of the mouth	1	6	„ of the middle toe	1	9
„ from the anterior edge of the orbit to the tip of the bill	1	6	„ of its claw	0	9
			„ of the hind toe	0	9
			„ of its claw	0	11

DESCRIPTION

Of a *female*, killed at the nest, near Carlton, May 22, 1827.

Colour of the dorsal aspect almost precisely the same as that of the male; but the feathers are more downy, and the blackish bars on the tail are more distinct. The throat is sparingly streaked with brown; the breast is darker than that of the male; the belly has less of the bright yellowish-brown, and is studded with short bars of blackish-brown: the flanks are also strongly barred with the latter colour, and the yellowish-brown of the thigh feathers is darker than in the male. The cere and legs have a bluish livid colour. The tarsi are thicker than in the male. The third and fourth quill feathers are of equal length, the relative proportions of the others being the same as in the male.

Dimensions

Of the *female*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	26	0	Length of the tarsus	3	0
„ of the tail	10	0	„ of the middle toe	1	11
„ of the longest quill feather	16	6	„ of its claw	0	9

[15.] 2. Buteo borealis. *Red-tailed Buzzard.*

Genus. Buteo. Ray.
American Buzzard. Lath. *Syn.*, i., p. 50, sp. 31. Mature.
Red-tailed Falcon. Penn. *Arct. Zool.*, ii., p. 205, No. 100. Mature.
Leverian Falcon. Idem, ii., p. 206, No. 101.? Fide Bonap.
Falco borealis. Lath. *Ind.*, i., p. 25, sp. 50.
Falco leverianus. Idem, i., p. 18, sp. 31. Fide Bonap.
Red-tailed Hawk. (*Falco borealis.*) Wilson, vi., p. 75, pl. 52, f. 2, misprinted for f. 1. Mature male.
American Buzzard, or White-breasted Hawk. (*Falco leverianus.*) Idem, vi., p 78, pl. 52, f. 1, misprinted for f. 2. Fide Bonap.
Falco borealis. Sabine. *Frankl. Journ.*, p. 670. Bonap. *Syn.*, p. 32, No. 20.

The Red-tailed Buzzard is rather common in the fur-countries, which it visits in the summer. It winters in Pennsylvania, and, according to Wilson, even breeds within the limits of the United States. Specimens were shot by the members of the Expedition on the Rocky Mountains, the plains of the Saskatchewan, and at York Factory, between the fifty-third and fifty-seventh parallels of latitude *. It preys on small quadrupeds, birds, and frogs. In the spring of the year, when the small Marmots, that inhabit the plains of the Saskatchewan, leave their burrows in quest of a mate, and, in the ardour of the pursuit, have laid aside their usual wariness, they often fall a prey to this Buzzard, which, sweeping along near the ground, with scarcely any change in the rapidity or direction of its flight, singles out one of these little animals, and, striking its claws into its neck, carries it off to the distance of several hundred yards, alights on the ground, and tears it to pieces.—R.

The bill of the Red-tailed Buzzard is proportionally shorter and higher than that of the common Buzzard, with the cere confined to a smaller portion of its base: the sinuosity of the upper mandible is also much greater. In all these characters there is a close resemblance to the Goshawk, whose bill is not so strongly sinuated as this is; it is, nevertheless, shorter, and consequently stronger, than that of the present bird †.—Sw.

DESCRIPTION

Of a *female*, killed 16th May, 1827, at Carlton House, lat. 53°.

Colour of the dorsal aspect intermediate between deep clove-brown and liver-brown. On

* Mr. Taylor has also received five adult specimens from the Table Land of Mexico, procured, near Real del Monte, by the late Mr. Morgan.—Sw.

† In Audubon's plate of the male and female *Falco borealis*, the former has a strongly and sharply sinuated upper mandible, whilst in the latter the cutting margin is nearly straight.—R.

the head this colour is unmixed, a little white appearing only at the base of the bill. On the neck it is relieved by some of the feathers being edged with paler yellowish-brown. The back, again, has a darker tint, approaching more nearly to liver-brown, and is unspotted. On the rump there are a few bars and edgings of yellowish-brown. The primaries, their coverts, and the secondaries, are of the prevailing tint, crossed by bars of dark liver-brown, the terminal bar being by much the broadest. The secondaries and some of the adjoining primaries are narrowly tipped with white, and both these classes of feathers have their inner webs towards the quills barred with white and brown. Some of the longest tail coverts are white, clouded by yellowish-brown and crossed by narrow bars of liver-brown. The *tail* is brownish-orange, tipped with soiled white, with a subterminal bar of blackish-brown: there are also traces of thirteen other brown bars. *Under surface.* The cheeks and neck beneath are coloured as on the dorsal aspect; the breast is white, with brown shafts; and the belly and flanks blackish-brown, with white blotches and cross bars. The vent and under tail coverts are white. The thigh feathers are soiled yellowish-white, with narrow faint cross bars of brown. The linings of the wings are white, with some yellowish-brown markings; and there is a large patch of blackish-brown adjoining to the upper edge of the wing. The greater inner coverts are barred with brown. The inner surfaces of the quill feathers are blackish-brown towards the tips and pearl-grey towards the quills, mottled with brown and crossed by narrow bars of the same. The tail is slightly tinged with buff-orange beneath, and is crossed by very faint bars of blackish-grey. *Bill* bluish-black. *Legs* bluish.

Form, &c.—The head is rather large. The bill is wide at the base and compressed anterior to the cere, with a roundish ridge and a strong hooked tip: the curve of the ridge is elliptical, but it is not so much depressed at the base as that of the common Buzzard. The cutting edge of the upper mandible has a very distinct obtuse lobe: the lower mandible is obliquely truncated at the tip. The *nostrils* are oval, nearly longitudinal, and partly concealed by hairs. The *lores* are densely covered with short white hair-like feathers, upon which long black hairs are arranged in a stelliform manner. The eyebrow projects as in the Eagles. *Wings.* The fourth quill feather is the longest; the third and fifth are only a line or two shorter; the second and sixth are half an inch shorter than these three; the seventh is more than an inch shorter than the sixth; and the eighth is equal to the first and about an inch shorter than the seventh. The outer webs of the second, third, fourth, and fifth are chamfered away towards their tips, and in the three latter very suddenly: the web of the sixth is narrowed so gradually as not to produce a sinuation. The first to the fourth inclusive have their inner webs strongly sinuated, and the fifth has a very oblique sinuation. The *tarsi* are strong, feathered about two inches below the joint anteriorly, and protected beneath by seven large transverse scales: naked their whole length posteriorly, with thirteen large scales. The hind *toe* is the shortest, the outer one is nearly as long as the inner one, and the middle one is four or five lines longer than these: the latter is connected to the outer one by a short web. There are six or seven *scutelli* on the middle toe, and four on each of the others.

Dimensions

Of the *female*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	25	0	Length of the bill from the angle of the mouth	1	9
,, of the tail	10	0	,, of the tarsus	3	3
,, of the longest quill feather	16	0	,, of the middle toe	1	10
,, of the bill measured along its ridge	1	6			

[16.] 3. Buteo lagopus. *Rough-legged Falcon.*

Genus. Buteo. Ray.
Rough-legged Falcon. Penn. *Arct. Zool.*, ii., p. 200, No. 92. Old female.
Chocolate-coloured Falcon. Idem, ii., p. 201, No. 94, pl. 200, f. 2.? *
Placentia Falcon. Lath. *Syn. Suppl.*, p. 19, sp. 57. Old bird, autumn. Idem, *Syn.*, i., p. 76, sp. 57.?
Falco lagopus. Lath. *Ind.*, i., p. 19, sp. 33.
Falco Sclavonicus. Idem, i., p. 26, sp. 54.
Falco spadiceus. Idem, i., p. 27, sp. 57, excl. syn. Phil. Trans.
Buse gantée. Vaill. *Ois. d'Afr.*, i., pl. 18.
Rough-legged Falcon. (*Falco lagopus.*) Wilson, iv., p. 59, pl. 33, f. 1.
Falco lagopus. Temm., i., p. 65. Bonap. *Syn.*, p. 32, No. 18.

Plate xxviii.

A specimen of this bird, in most perfect plumage, was killed in the month of September, by Mr. Drummond, on the Smoking River, one of the upper branches of the Peace River. It arrives in the fur-countries in April or May, and, having reared its young, retires southwards early in October. It winters on the banks of the Delaware and Schuylkill, returning to the north again in the spring. It is by no means an uncommon bird in the districts through which the Expedition travelled, but, being very shy, only one specimen was procured. A pair were seen at their nest, built of sticks, on a lofty tree standing on a low, moist, alluvial point

* Although the *Chocolate Falcon* of Pennant must belong either to this species or to that of *F. Sancti-Johannis*, yet the *Chocolate Falcon* of Forster, with whom the name originated, is evidently a different species, perhaps the young of *F. cyaneus*. This author does not describe his specimen, but merely says that it is smaller than the *Moor Buzzard*, which it much resembles. Had this bird been the *F. lagopus*, he could scarcely have overlooked the feathered legs. The *Bay Falcon*, *var. A.*, Latham (*Syn.*, i., p. 54, No. 34), is merely a reference of Forster's bird to the *Moor Buzzard*. The description of the *Placentia Falcon* of the same author (*Syn.*, i., p. 76, sp. 57) was taken from a drawing, and will apply either to *F. lagopus* or *F. Sancti-Johannis;* but the *Placentia Falcon*, described in his *Supplement* (p. 19, sp. 57), is undoubtedly *F. lagopus*, and agrees in every particular with the one we have described in the text.

BUTEO LAGOPUS.

London Printed for John Murray, Bookseller to the Admiralty, January 1st 1829.

of land, almost encircled by a bend of the Saskatchewan. They sailed round the spot in a wide circle, occasionally settling on the top of a tree, but were too wary to allow us to come within gunshot; so that, after spending much time in vain, we were fain to relinquish the chase. In the softness and fulness of its plumage, its feathered legs, and habits, this bird bears some resemblance to the Owls. It flies slowly, sits for a long time on the bough of a tree, watching for mice, frogs, &c., and is often seen skimming over swampy pieces of ground, and hunting for its prey by the subdued daylight, which illuminates even the midnight hours in the high parallels of latitude. Wilson observes that, in Pennsylvania, it is in the habit of coursing over the meadows long after the sun has set. It is fitted for this nocturnal chase by the softness of its plumage, which contributes to render its flight noiseless, like that of an Owl.—R.

The small bill of the *B. lagopus*, with scarcely an indication of the festoon or sinus, and its long and attenuated wings, may be thought to place it as a typical example of this division; but the foregoing observation renders the accuracy of this supposition very questionable.—Sw.

DESCRIPTION

Of a specimen in very perfect plumage, killed near the eastern base of the Rocky Mountains, lat. 55°, Sept. 1826, supposed to be a *male*.

Colour.—The head and adjoining part of the neck are pale wood-brown approaching to white, streaked longitudinally with liver-brown. The remainder of the neck, the back, scapularies, and lesser wing coverts, are liver-brown, each feather bordered laterally, but not at the end, with reddish-orange or bright rust-colour. These edgings are darker and very narrow on the rump; but they are broad on the tail coverts, which are also tipped with white. The outer webs of the bastard wing, greater coverts, and secondaries, are liver-brown; their inner webs are mostly white, barred next the shafts with brown. The ends of the primaries are blackish-brown, with a greyish tinge on the outer webs; the inner webs next the quills are pure white, with some slight brown markings along the shaft. The tail is brownish-white on the basal half, and blackish-brown on the remainder, with a narrow tip of soiled white. The feathers have a ferruginous border posteriorly; and there is much white on their inner webs. *Under surface.* The throat and under aspect of the neck are coloured like the upper surface, but the brown streaks are narrower. The breast is wood-brown, with liver-brown shafts. The belly and flanks are dark umber-brown, which, towards the vent, is mixed with ferruginous; and in the outer thigh feathers these two colours are equal in quantity, the dark one being confined to the centres of the feathers. The under tail coverts are white, tinged with brown. The under surface of the tail is yellowish-white on the basal, and slate-grey on the distal half. The linings of the wings are mostly wood-brown: there is a large blackish-brown patch near the outer edge of the wing; and the under primary coverts are blackish-grey. The inner surfaces of the quill feathers are pure white at the base and shining blackish-brown towards their tips.

The short feathers covering the thighs and legs are pale wood-brown, with small longitudinal marks.

Form, &c.—*Bill* much curved, the arc less elliptical than that of the two preceding species. It is considerably compressed, but has a rather obtuse, rounded ridge. The cutting edge of the upper mandible is very slightly undulated, and the hooked point is rather short, though strong. The gape is wide, the angle of the mouth extending under the orbit. The *cere* is short when compared with that of the two preceding species, and it is partly concealed by the swelling out of the feathers of the forehead. *Nostrils* large and roundish. *Lores* furnished with black hairs, which are disposed in a stelliform manner over a dense covering of white feathers. *Eyebrows* projecting. The plumage of the head is very compact, without any indication of the ruff or facial circle, which exists in the following species. *Wings* falling an inch short of the end of the tail. The third quill feather is the longest; the fourth is scarcely perceptibly shorter; the fifth is a quarter of an inch shorter; the second is rather more than an inch and a quarter shorter than the third; the sixth is an inch shorter than the second, or more than two inches shorter than the fifth; the seventh is an inch and a half shorter than the sixth; and the three following ones diminish half an inch each in succession. The outer webs of the third, fourth, and fifth, are rather suddenly chamfered away: that of the second is also narrowed, but so near the quills as to be scarcely evident. The inner webs of the first to the fourth inclusive are strongly sinuated. The outer margins of the quill feathers are close and even, not with the tips of the barbs reverted, as in the first wing feathers of the Owls; their inner margins, however, approach to those of the latter genus, in being thinner and more detached than those of the other Buzzards or Harriers described in this work. The *tail* is moderately rounded. The scapularies are rather long, and the belly is clothed with unusually thick and long plumage: the under tail coverts are particularly downy. The outer thigh feathers reach nearly to the feet. The *tarsi* are thickly clothed with short feathers, which project over the roots of the toes. The *toes* are short and strong. The middle one is the third of an inch longer than the others; the remaining three differ little from each other in length, but the hind one is the most robust and has the longest claw. The basal halves of the toes are covered with small irregularly hexagonal scales; the outer halves are covered by shield-shaped transverse scales—five on the middle toe, four on the lateral ones, and three on the hind one. The *claws* are black, not much curved, sharp, and grooved beneath: the outer edge of the middle one is sharp.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	23	6	Length of the bill measured along its ridge	1	2
,, of the tail	9	6	,, of the bill from the angle of the mouth	1	7
,, of the longest quill feather	15	6	,, of the tarsus	2	7
			,, of the middle toe	1	3

CIRCUS CYANEUS? *var.*

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[17.] 4. Buteo (Circus) cyaneus? var.? Americanus. *American Hen-Harrier.*

Genus. Buteo. Ray. *Sub-genus.* Circus. Antiq.
The Ring-tailed Hawk. (*Pygargus accipiter*, Canadensis.) Edwards, pl. 107. Female from Hudson's Bay.
Falco spadiceus. Forst. *Phil. Trans.*, lxii., p. 383, No. 2.? Yearling from Hudson's Bay.
Moor Buzzard, var. A. Bay Falcon. Lath. *Syn.*, i., p. 54, No. 34.? Forster's specimen.
Moor Buzzard, var. B. White-rumped Bay F. Idem, i., p. 54, No. 34. Young; described from a drawing made at Hudson's Bay.
Hudson's Bay Ring-tail. Idem, p. 91, sp. 76.
Ring-tail. Penn. *Arct. Zool.*, ii. p. 209, sp. 106.
Falco cyaneus, var. β. Lath., *Ind.*, p. 40, sp. 94.
} From Hudson's Bay.
Marsh Hawk. (*Falco uliginosus.*) Wilson, vi., p. 67, pl. 51, f. 1. Young. Pennsylvania.
Falco uliginosus. Sabine. *Frankl. Journ.*, p. 671. Young female. Hudson's Bay.
Falco cyaneus. Bonap. *Orn.*, ii., p. 30, pl. 12. Adult male.
Annooch-kee-næpeek-quæshew. (*Snake Hunter.*) Cree Indians.

Plate xxix. Male.

This bird takes its prey from the ground, hunts long and diligently for it on the wing, and quarters the district regularly, so as to survey every spot, wheeling backwards and forwards in easy, graceful circles, with little seeming effort or flapping of the wings. It is wary, but not timid,—avoiding the sportsman, but not easily driven away from its hunting-grounds. It is a common species on the plains of the Saskatchewan, seldom less than five or six being in sight at a time, each keeping to a particular beat until it has completely examined it. Their flight was in general low; but although Mr. Drummond and I watched them for hours at a time, and lay as still on the grass as possible, they invariably rose out of gunshot as they passed over our heads, and the specimens were procured only by lying in ambush near the nest. Notwithstanding they appeared to be almost constantly on the wing, we seldom saw them carry anything away; and they seemed on the whole to be less successful hunters than the little *Falco sparverius*, or the lazy Buzzards, that sat watching for their prey on the bough of a tree. A small green snake is very plentiful in that quarter, and forms a considerable portion of the food of this bird,—whence its Cree name of the "Snake Hunter." The nests that we observed were built on the ground, by the sides of small lakes, of moss, grass, feathers, and hair, and contained from three to five eggs, of a smaller size than those of the domestic fowl, but similar in shape, and having a bluish-white colour, without spots. The eggs measured an inch and three-quarters

in length, and were an inch across where widest. The natives informed us that these birds build indifferently on the ground or in low bushes. They reach the fur-countries in the latter end of April, and depart about the end of September. They are common in the United States, and are said by the Prince of Musignano to be found in all the varieties of plumage in Florida, but that in the northern States the young only are known. We saw only mature birds on the plains of the Saskatchewan, and none but the young (or what are considered as such) on the shores of Great Bear Lake. It is possible, that the old and the immature birds may keep apart in winter as well as summer, and migrate, on the change of seasons, through the same number of degrees of latitude. I could not ascertain whether the species breeds so far north as Bear Lake.

The identity of the American Hen-Harrier with the European one has not been satisfactorily proved. The very dissimilar plumage of the males and females, and the changes they undergo from age, render the investigation difficult. The sexes of the European bird were long considered to be distinct species, the male being termed *F. cyaneus*, or Hen-Harrier, and the female *F. pygargus*, or Ring-tail. This mistake was rectified by Montagu, in a paper published in the Linnæan Transactions; and he at the same time established another species (*F. cineraceus*), which had been previously confounded with the *F. cyaneus*. The young birds, being more easily procured, were until lately the only American specimens submitted to naturalists, and were considered to be a peculiar species to which the name of Marsh Hawk * (*F. uliginosus*) was applied. The matter is not yet cleared of doubt; and it is possible, even admitting the identity of the *F. uliginosus* and *F. cyaneus*, that the *F. cineraceus*, or another species, may exist in North America, individuals of which, being confounded with the Marsh Hawk, may have been the origin of various discrepancies in the descriptions given by authors.

Eight specimens were brought home by the last Expedition. Five of these (three males and two females) were killed in the fifty-third parallel of latitude early in the breeding-season, and are undoubtedly all of one species; that fact being clearly ascertained by one of the pairs having been killed at their nest, which contained three eggs. They correspond with the sexes of the *F. cyaneus* of Europe in mature plumage, though they are not, perhaps, very old birds. The other three specimens were procured at Great Bear Lake, in latitude

* The Marsh Hawk (*Accipiter paludarius*) of EDWARDS, pl. 291, is engraved and described from a drawing made by Mr. William Bartram. It has stout reticulated *tarsi*, and is otherwise so dissimilar to our bird, that it cannot be quoted as a synonyme. Pennant and Latham take their descriptions from Edwards. Wilson describes the young of our bird under the name of Marsh Hawk, but intimates that he has little doubt of its being the same with the European Hen-Harrier. The Prince of Musignano considers them to be identical.

65°, where none of the mature birds were seen. They differ widely in appearance from the five old birds.

For the advantage of reference in the subjoined remarks, the specimens are numbered in the following list:—

1. A *mature male*, killed at the nest, near Carlton, May 19. This specimen much resembles the figure in Bonap., *Orn.*, ii., p. 30, pl. 12.
2. The *female* companion to the above. The oviduct contained two full-sized eggs, and there were three in the nest.
3. A *mature male*, killed at Carlton, in May.
4. A *mature female*, killed at Carlton, in June.
5. A *mature male*, killed at Cumberland House, lat. 54°, in May.
6, 7. *Young males*, killed at Bear Lake, in May, soon after the first arrival of the migratory birds, and therefore at least ten months old.
8. *Young bird*, supposed to be a female, killed, in September, at the same place. This may be a yearling.

These eight specimens being submitted to Mr. Yarrell's inspection, he pronounced them to be examples of *F. cyaneus* in various stages. A specimen of a young bird was also obtained, on the first Expedition, at York Factory, and is noticed by Mr. Sabine, in the Appendix to the Narrative of the Expedition, under the name of *Falco uliginosus*.—R.

The relative proportions of the quill feathers, by which our accurate countryman, Montagu, detected the difference between the European *Circus cyaneus* and *cineraceus*, is, perhaps, one of the best distinctions characterizing these species. It still, however, remains to be ascertained whether all those Harriers found in Asia, Africa, America, and Australia, agreeing with *cyaneus* in the structure of their wings, are to be considered the same species; or, rather, may we not suspect that a more intimate knowledge of the birds from such distant localities will acquaint us with specific distinctions? The relative lengths of the quill feathers exercise, as is well known, a powerful influence on the mode and velocity of flight, and has been successfully employed to designate natural groups. But in species standing at the confines of their type, this character, in common with all others, must be looked upon cautiously, even when employed as a specific distinction. Now, the typical structure of the wing in the present group must unquestionably be that most prevalent among the species. It must, however, be remembered, that even this character is subject to variation, according to the age and perhaps the locality of the bird, and that it must not be insisted upon with too much rigour.

A finely-plumaged male bird of *Falco cyaneus* (*L'Oiseau St. Martin*), in the Paris Museum, had the proportions of the quills as follows: first equal to the seventh; the second half an inch shorter than the fifth; the third a slight degree shorter than the fourth; which was the longest of all. The under plumage was pure white, the tail hardly rounded, and the two middle feathers slightly shorter than the rest. The two most adult of our male specimens (Nos. 1 and 3) very closely agree in these dimensions, except, indeed, that the difference between the third and fourth quill feathers is not very apparent; but we cannot, on this account *alone*, consider them identical, for precisely the same characters are equally apparent in the *Circus histrionicus* of Quoy and Gaimard (*Busard bariole*, Mus. Par.), a bird somewhat smaller, and barred beneath with rufous, but in general disposition of colours, and length of wings and tail, closely resembling *C. cyaneus*.

On the supposition that the whole of our specimens belong to one species, (a fact, however, which cannot be proved,) we shall now give the relative lengths of the quill feathers in what appears a young male (No. 7). First quill feather intermediate in length between the sixth and seventh; second equal to the fifth; third equal to the fourth, which are the longest. It thus appears that even in characters upon which we may generally place some reliance, individuals of the same species will materially differ. European specimens in the French Museum of *Circus cyaneus* exhibit the third and fourth quills equal; and this is also apparent in some of those collected in America. We must, however, notice a specimen which presents a considerable deviation from the rest; it is a Bear Lake specimen (No. 8), killed in the autumn, and exhibits a general resemblance to the other two procured there, but the colours of its plumage, deep liver-brown above and rust-coloured below, are considerably darker. Its sex was not ascertained, but it was probably a female, the other two being males; and it may have been a yearling bird, not above three months old, while the others, having been killed in May, must have been birds at least as old as the preceding season. In it the second quill feather is a very little shorter than the fifth, and an inch and three-quarters longer than the sixth: the relative lengths of the other feathers correspond with No. 7, above mentioned. No great stress can be laid on the difference exhibited by this specimen in the clearness and brightness of its colours, for this is generally a mere indication of youth. In most of the *Falconidæ* that are variegated, either with brown or rufous, the colours are most intense in youth, and gradually become paler or disappear with advanced age; but the total absence of the festoon or obsolete tooth, in the upper mandible of this bird, is somewhat remarkable. We know not of any instance that would lead us to believe this deficiency to be the mere

effect of age, and it seems extraordinary that a structure so apparently essential should not be developed at the time nature intends the bird should seek its own sustenance. It has, indeed, been observed that the bill of the *Falco Islandicus* is sometimes destitute of a notch; and although we have attempted to account for this variation, still it is by no means *certain* that this may not indicate a difference of species. That there is some ground for this supposition, it may be as well to mention that, although the difference between *C. cyaneus* and *cineraceus* may be very well drawn from the structure of the wings, yet that a more important distinction between them has been overlooked. In *cyaneus*, the festoon of the upper mandible is *fully developed*, and distinctly apparent, during *every age* of the bird, whether male or female; while in *C. cineraceus* this festoon is absolutely wanting in every specimen we have examined, in all of which the commissure of the bill perfectly resembles that of the bird before us (No. 8). Nevertheless, from the following differences in the structure of their respective wings, we do not feel justified in considering them as of the same species :—

Falco cineraceus, a perfect adult bird, in the Paris Museum (*Busard Montagu*).	Bird No. 8, above mentioned.
First quill feather, equal to the sixth;	First, intermediate between the sixth and seventh;
Second, in the least degree longer than the fourth;	Second, half an inch shorter than the fifth;
Third, the longest;	Third and fourth, equal and longest;
Fifth, intermediate in length between the first and second.	Fifth, a very little longer than the second.

To illustrate further the variation in the wings of the young and adult birds of this group, the following measurements were taken from a male bird of the first year (*avant la première mue*), belonging to *C. cineraceus*, and now in the Paris Museum. First quill feather intermediate between the sixth and seventh; second equal to the fifth; third shorter than the fourth, which is the longest. The colours of this specimen assimilate very closely to our bird (No. 8), and tend to show that the latter is a bird of the first year. Like ours, it is almost entirely of a bright rufous beneath, without any other indications of those stripes, which are afterwards apparent, than a dark line down the shaft of each feather.

Adult specimens of *cineraceus*, brought from India by M. Sonnerat, exhibit the following variations: *Male.* First quill much shorter than the sixth, but intermediate between the sixth and seventh; second rather shorter than the fourth; third the longest; fourth longer than the second. *Female.* First quill feather

equal to the sixth; second equal to the fourth. Upon the whole it appears that specific distinctions among these birds, when drawn from the proportions of all the quill feathers, unsupported by other considerations, are liable to much objection, since we see that these characters vary in birds obviously of the same species, while others, perfectly distinct, agree in this particular. The Egyptian *Circus gallinarius* of Savigny (which, by a note of M. Temminck's, attached to the specimens in the Paris Museum, he seems to confound with the European species) has, nevertheless, all the indications of being distinct: the membrane between the toes is particularly small. There is a black variety of *C. cineraceus* (a specimen of which was shot near Chartres by M. Marchand, and is described in the *Bull. des Sciences*, iii., pl. 12, f. 1.), which must not, however, be confounded with another species, from Southern Africa, having the plumage black and the tail barred with white.

We have considered it better to offer these general observations to the reader, rather than to hazard any direct opinion on the birds before us. The whole of the Harriers appear very imperfectly known; and nothing short of an actual acquaintance with the birds in a state of nature, or a perfect series of specimens of different ages, will solve the doubts that now impede their clear investigation.—Sw.

DESCRIPTION

Of (No. 3.) a *mature male*, killed on the plains of the Saskatchewan, May 17, 1827.

Colour of the dorsal aspect of the head, neck, and lesser wing coverts, bluish-grey, with darker shafts. The back, scapularies, and tertiaries, have a deeper hue, verging to greyish or broccoli brown. There is a patch on the nape of the neck composed of feathers having white bases, brown centres, and ferruginous borders, all of which colours are partially seen. The quill feathers and greater coverts are blackish-brown towards their points, bluish-grey towards the base of the exterior webs, and white, barred or spotted with brown, on the interior ones. Some of the primaries and secondaries are tipped with white. The tail coverts are pure white, forming a bar across the base of the tail an inch and a half wide. The two middle tail feathers are bluish-grey, tinged with brown, bordered at the tip with soiled white, and crossed by five blackish-brown bars, of which the terminal one is half an inch broad; the others are very narrow and faint. The outer tail feather is brownish-grey exteriorly and at the tip, and its inner web is white, with five narrow brown bars. The other feathers exhibit more grey and less white the nearer they are to the middle of the tail, and have the brown bars extending to both webs.

Under surface.—The cheeks and auriculars are ash-grey, with a paler border to the orbit. The short feathers composing the semicircle behind the auriculars are tipped with the colour of the crown of the head; but they have dark shafts and some pale yellowish-brown mottlings towards their bases, which partially appear: in their texture they contrast strongly with the more wiry auriculars. The under surface of the neck is slate-grey. The breast is

white, with a small rhomboidal cinereous mark in the centre of each feather. The belly and thighs are white, with some minute scattered grey specks. The vent feathers are spotless; but the under tail coverts have arrow-headed spots larger than those on the belly. The tail beneath is pale ash-grey with a slight tinge of buff, and is less distinctly barred than its upper surface. The linings of the wings are pure white, with the exception of two or three brownish-grey bars on the secondary coverts.

Form, &c.—The *bill* is small, much compressed, with a narrow ridge and a rather small hook. The curve of the ridge is flatly elliptical until near the point, when it terminates in the small arc of a circle. The cutting margin of the upper mandible is distinctly lobed. The *cere* covers more than one-third of the ridge of the bill, and, in conjunction with the lores, is clothed laterally with a short down, over which there is a layer of stiff, bristly black hairs, disposed in a stelliform manner, their ends curving up and meeting with their fellows on the ridge of the bill, so as to conceal the nostrils. The *nostrils* are broadly oval and longitudinal. The lower mandible is rounded at the end. The folded *wings* are rather more than two inches short of the end of the tail. The fourth quill feather is the longest; the third is scarcely a line shorter; the fifth is about half an inch shorter than the fourth; the second a quarter of an inch shorter than the fifth; the sixth two inches shorter than the latter; and the first is a little longer than the seventh, which is more than an inch shorter than the sixth: the three following ones diminish successively half an inch each. The webs of the primaries are comparatively narrow at their points, and they are not so broad near the quills as those of the Buzzards, described in the preceding pages, nor so abruptly sinuated on their inner webs. The second to the fifth inclusive have distinct sinuations on their outer webs; and the first to the fourth inclusive are obliquely sinuated on their inner ones. The *tail* is long and slightly rounded, the outer feathers being scarcely half an inch shorter than the middle ones. The webs of the plumage covering the belly are much more decomposed than in the typical Buzzards. The thighs and *tarsi* are long and slender. The outer thigh feathers reach about half way down the tarsus, and the latter is clothed anteriorly with short feathers for nearly three-quarters of an inch. The rest of the tarsus is covered before and behind with large transverse scales, and it is very little increased in thickness at its junction with the toes. The *toes* are slender and moderately long: the middle one is the longest; the outer one is longer than the inner one; and the hind one is the shortest, being only about half as long as the middle one. There is a web between the bases of the middle and outer toes. The *claws* are very acute, and are grooved beneath: the hind one is the longest and the outer one the smallest, but there is no marked disproportion amongst them. The middle one has a sharp inner margin.

Dimensions
Of the *male* No. 3.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	20	9	Length of the bill along its ridge	1	0
,, of the tail	9	3	,, of the tarsus	2	10
,, of the longest quill feather	13	0	,, of the middle toe	1	3
,, of the bill from the angle of the mouth	1	3	,, of its claw, in a straight line	0	7
			,, of the hind claw ,,	0	9

No. 5, a *male*, killed at Cumberland House in the same month, corresponds exactly with the preceding in colour of the plumage, form of the bill, the relative lengths of the quill feathers, &c., except that the inner wing coverts are totally white, without bars, and the spots on the under surface of the body are much smaller.

No. 1, a *male*, killed at Carlton a fortnight earlier than Nos. 3 and 5, differs from them in having central yellowish-brown oval marks on the breast feathers, some pretty large brown bars on the flanks and under tail coverts, many arrow-shaped spots on the thighs, and dark cinereous heart-shaped marks on the linings of the wings. The upper plumage had a browner tinge, and the tail is darker, with five more complete blackish-brown bars. The lobe of the upper mandible is equally distinct as in the other two specimens, and, with the very slight exception of the first quill feather being merely equal to the seventh, instead of exceeding it, the wings have a similar structure.

DESCRIPTION

Of (No. 2.) a *female*, in full plumage, killed at the nest, May 14, 1827.

Colour of the whole dorsal aspect liver-brown; the feathers of the crown of the head, upper part of the neck, and lesser wing coverts, together with some of the scapularies, are edged with pale yellowish-brown. There are also some narrow chestnut-brown edges on the rump feathers; but the rest of the upper plumage, including the quill feathers and greater coverts, are unmixed liver-brown: the tips of the secondaries and primary coverts are edged with soiled white. The tail coverts are white. The *tail* is crossed by six bars of liver-brown, of which the subterminal one is the broadest: its tip is soiled white. On the four middle feathers the bars are separated by a paler colour, approaching to clove-brown; on the more exterior feathers the spaces between the bars on the inner webs are pale yellowish-brown. *Under surface.* The cheeks are more ferruginous than the crown of the head, and the feathers of the facial semicircle are mostly edged with brownish-white. The under surface of the neck is liver-brown, with white and yellowish-brown edgings. The belly, under tail coverts, and posterior part of the wing linings, are pale yellowish-brown, with conspicuous chestnut-coloured elliptical spots. The remainder of the linings of the wings are faint straw-yellow, blotched with dark clove-brown. The under surfaces of the quill and tail feathers are barred with clove-brown, the intermediate spaces being yellowish-white, gradually changing to brownish-grey.

Form.—The lobe on the cutting margin of the upper mandible is well marked. The third quill feather is equal to the fourth; the fifth is half an inch shorter; the second is an inch shorter than the third; the sixth is two inches and a half shorter than the fifth; and the first and seventh are an inch shorter than the sixth. The *toes* are scutellated above to their bases, and the inner edge of the middle claw is very acute, the groove producing it being very distinct.

DIMENSIONS

Of the *female* No. 2.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	22	6	Length of the bill along the ridge	1	1½
,, of the tail	10	3	,, of the tarsus	3	4
,, of the longest quill feathers	14	6	,, of the middle toe	1	6

Another female (No. 4), killed on the plains of the Saskatchewan in the beginning of June, corresponded in every point with the preceding.

DESCRIPTION

Of (No. 6.) a *young male* (supposed to be of the preceding season), killed at Great Bear Lake, lat. 65°, May 31, 1826.

COLOUR of the dorsal aspect liver-brown. The feathers of the head are narrowly edged with deep orange-brown, and there is a whitish border to the orbit, most conspicuous behind. The facial circles meet on the nape of the neck, and the feathers composing them have liver-brown centres and tips, lateral margins of pale wood-brown, and white bases. The feathers of the neck have mostly yellowish-brown edges. The back is of an uniform liver-brown, with a pale yellowish-brown spot on one or two of the scapularies. The lesser wing coverts have marginal ferruginous blotches, and the greater coverts and secondaries are narrowly tipped with white. The primaries are crossed by from seven to nine liver-brown bars, the intermediate spaces towards the tips being merely a lighter shade of the same colour, but towards the bases of the inner webs being white or pale wood-brown. The white tail coverts form a narrow bar across the base of the tail. The tail is crossed by five bars of liver-brown, the terminal one being the broadest, the intermediate spaces, which equal the bars in breadth, are hair-brown on the two middle feathers, and pale ferruginous on the others; and all the feathers are narrowly edged on their tips with white. The *under surface* of the neck is ferruginous, with tapering longitudinal streaks of liver-brown; the breast is paler, and the streaks are confined to the shafts. The flanks are dark orange-brown, with paler edgings. The posterior part of the belly and vent are very pale ferruginous, without spots; and the under tail coverts and thighs have a deeper ferruginous tint, also without spots. The under surface of the tail is very pale buff, with liver-brown bars. The linings of the wings have a slight ferruginous tinge, with dark-brown blotches. The inner surfaces of all the quill feathers are white, slightly tinged in a few places with brown, crossed by narrow clove-brown bars, and becoming entirely brown at their tips.

FORM, &c.—The lobe of the upper mandible is not quite so distinct as in the older specimens described above. The third quill feather equals the fourth; the second and fifth are an inch shorter; the sixth is two inches shorter than the fifth; and the first is about a quarter of an inch shorter than the sixth, and as much longer than the seventh. The tarsi correspond with those of the older birds, even to the number of *scutelli* (fifteen before and nineteen behind, besides a reticulated portion adjoining to the upper joint behind).

DIMENSIONS

Of the *young* bird No. 6.

	Inches.	Lines.
Length from the tip of the bill to the end of the tail	18	6
,, of the tarsus	3	0
,, of the middle toe	1	3

No. 7, another young *male*, killed a few days earlier at the same place, scarcely differs a shade in the colour of its plumage, and corresponds minutely with the preceding in form. The plumage of both is considerably worn.

DESCRIPTION

Of (No. 8.) a *yearling female ?* killed, in the end of September, at Great Bear Lake, a few days before the departure of all the migratory Falcons to the southward.

COLOUR of the dorsal aspect considerably deeper than in the preceding young male, being intermediate between umber and blackish browns, and it has a strong bronze reflection. The narrow edgings of the feathers of the crown, and the broader ones of the neck and wing coverts, are deep shining orange-brown. The quill feathers and their coverts are blackish-brown; the upper halves of their inner webs are white and wood-brown, with three cross bars of dark-brown. The tail coverts are white, edged with pale yellowish-brown. The two middle tail feathers have five brownish-black bars, alternating with clove-brown. On the other tail feathers the bars are separated by reddish-orange spaces. The under plumage presents generally a deeper orange-coloured brown than the young male above described.

FORM, &c.—The bill differs from all the other seven specimens in its cutting margin being almost straight, with scarcely an indication of the lobe. The tail is more rounded, from the perfect state of the individual feathers. The tarsus has fourteen *scutelli* anteriorly; but its upper half posteriorly is reticulated by smaller scales. The third quill feather is the longest; the fourth is scarcely perceptibly shorter; the second and fifth are about an inch shorter; the sixth is two inches shorter than the fifth; and the first is exactly intermediate between the sixth and seventh. The whole plumage is in high order; all the feathers rounded at the tips and soft on the edges.

DIMENSIONS.

	Inches.	Lines.
Length from the tip of the bill to the end of the tail	20	6
,, of the tarsus	3	2
,, of the middle toe	1	4

On Sir John Franklin's first Expedition I killed a specimen on the shores of Hudson's Bay (lat. 57°), on the 23rd of August, which very nearly resembles the preceding, but, being less spotted, is probably an older *female*. It corresponds exactly with Wilson's figure of the female Marsh Hawk (*F. uliginosus*), to which Mr. Sabine referred it. This gentleman makes the following observations upon

it: "On comparison of the specimen of the Marsh Hawk with that of the Ring-tail now before us, the differences are strikingly obvious. The ferruginous colour of the under parts of the Marsh Hawk bring it nearer to some states of the *Ash-coloured Falcon* of Montagu; but in this case also the different colour of the male forms an obstacle to their identity *." I subjoin a brief description of that specimen, taken when it was recently killed.

DESCRIPTION

Of a *young female*, killed at York Factory, August 23, 1821.

Colour of the *bill* bluish-black; *cere* and *tarsi* bright-yellow. Plumage of the head and neck brownish-black, with ferruginous edgings, which are broader on the under surface of the neck and narrower on the crown. The back, scapularies, and wings, are very dark liver-brown, the lesser coverts being edged with ferruginous. The inner vanes of the quill feathers are broadly barred with buff-orange. The tail coverts are white. The two middle tail feathers are coloured, like the back, with obscure bars; the others are barred alternately with that colour and ferruginous, and they are all tipped with a soiled brownish-white. The whole *ventral aspect* of the body, the linings of the wings, the under tail coverts, and the thigh feathers, are of an uniform unspotted ferruginous colour. The inner surfaces of the quill feathers are tinged with buff-yellow, and crossed by irregular bars of blackish-brown and lead-grey.

Form.—Cutting margin of the upper mandible slightly lobed. The fourth quill feather is the longest. The tail is long and rather square. When the gullet is distended, a large naked space appears on each side of the neck, as in the Owls.

Dimensions.

	Inches.	Lines.
Length from the tip of the bill to the end of the tail (before it was skinned)	19	6
Extent from the tip of one wing to the tip of the other	36	0
Length of the tail	11	
„ tarsus	3	

From the shortness of the descriptions given by the older writers of their species, and their neglect of attention to structure, it has now become almost impossible to ascertain what were the birds they alluded to; and we have, therefore, confined ourselves entirely, in our account of the *Falconidæ*, to those of which we have actually seen specimens from the fur-countries. The Prince of Musignano, the latest writer on American ornithology, enumerates seventeen species of this family in his Synopsis of the Birds of the United States, published in 1826; to which he has added an eighteenth in his Continuation of Wilson's Ornithology. Of these, eleven are described in this work as natives of the fur-countries, together with

* When this passage was written, Mr. Sabine was not aware that the mature male of a bluish-grey colour had been seen in America, and therefore concluded that the Marsh Hawk was a species peculiar to that continent.

three others, which do not enter into his list; viz. *Falco Islandicus, F. æsalon,* and *Buteo vulgaris;* making in all fourteen northern species. Of the remaining seven * of his list, four †, being inhabitants of the warmer parts only of the United States, do not require any notice from us; but the other three (*Accipiter Cooperii, Buteo Sancti Johannis,* and *Buteo hyemalis*) are said to be northern birds, although we were not fortunate enough to procure specimens of them. We shall, on this account, content ourselves with merely giving the short characters assigned to them by the writer just mentioned.

"*Accipiter Cooperii.* Upper plumage chocolate-brown, margined with rufous; tail ashy-brown, with four black bands; flag feathers crossed by five or six blackish bands; under plumage whitish, with a dusky medial stripe. *Cere* greenish-yellow; *irides* and *feet* bright-yellow. Young male? Winters in New Jersey."

"*Buteo Sancti Johannis,* black; white round the eye; tail rounded, with narrow bands of pure white, and tipped with dull-white. *Young,* varied with white, brown, and ferruginous. Winters in Pennsylvania. Rare."

"*Buteo hyemalis.* No collar round the face; wings, when closed, reaching but little beyond the middle of the tail. Common in Pennsylvania all the winter."

Pennant, in his *Arctic Zoology,* enumerates twenty-nine *Falconidæ* as inhabitants of North America:—

No. 86. Sea Eagle.
87. Black Eagle. H.B.
88. Black-cheeked Eagle.
90. White Eagle.
91. Osprey.
92. Rough-legged Falcon.
93. St. John's F. H.B.
94. Chocolate-coloured F. H.B.
95. Newfoundland F.
96. Sacre F. H.B.
97. Peregrine F. H.B.
98. Gentil F.
99. Goshawk.
100. Red-tailed F.
101. Leverian F.
No. 102. Red-shouldered F.
103. Buzzard F.
104. Plain F.
105. Marsh F.
106. Ring-tail F. H.B.
107. Winter F.
108. Swallow-tailed F.
109. Buzzardet.
110. Little F.
111. Pigeon F. H.B.
112. Dubious F.
113. Dusky F.
Suppl. Streaked F. H.B.
„ Golden Eagle.

Those with the letters H.B. affixed are expressly stated to be inhabitants of Hudson's Bay.

* Audubon has published a figure of *Astur Stanleii,* which is rather a small species, but the letter-press of his work not being yet before the public, we do not know its range or its characters.

† *Falco plumbeus, F. melanopterus, F. furcatus,* and *F. Pennsylvanicus.*

The following list, extracted from LATHAM's *Index Ornithologicus*, contains the species said by that author to be inhabitants of North America :—

Sp. 3. Falco melanæëtus.
4. „ fulvus.
5. „ leucocephalus.
7. „ ossifragus.
8. „ leucogaster.
12. „ Americanus.
17. „ candidus.
30. „ haliæëtus.
31. „ Leverianus.
33. „ lagopus.
41. „ furcatus.
47. „ buteo, var. β.
48. „ variegatus.
49. „ borealis.
57. „ spadiceus.
58. „ lineatus.
59. „ rusticolus.

Sp. 61. Falco obsoletus.
65. „ palumbarius.
66. „ gentilis.
69. „ Islandicus.
72. „ peregrinus.
74. „ Sancti Johannis.
75. „ sacer.
76. „ Novæ terræ.
78. „ hyemalis.
94. „ cyaneus, β.
95. „ uliginosus.
99. „ sparverius.
103. „ fuscus.
104. „ dubius.
105. „ obscurus.
106. „ columbarius.
Suppl. „ hyemalis, var.

THE subjoined wood-cuts are intended to illustrate the forms of the bills in some of the genera of the Falconidæ.

FALCO ÆSALON.

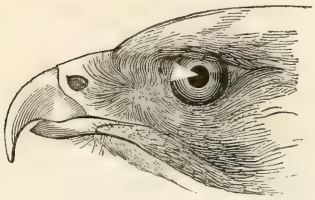
The bill of the *Merlin*, here represented, is short, strong, wide at the base, and gradually becoming more and more compressed towards its tip, which forms an acute hook, that curves down over the end of the lower mandible. The curve of the ridge from the cere to the tip is about the quadrant of a circle, having nearly the third of an inch radius. The ridge of the

cere is scarcely a continuation of the same arc, being more depressed; but it is too short to give a decidedly elliptical form to the curve of the bill. There is a conspicuous angular tooth on the cutting margin of the mandible near the tip, and posterior to it the margin is slightly waved. This peculiarity, seen in no other genus, constitutes the typical perfection of the whole family. The nostrils, small and perfectly round, open directly inwards, and have a central column. The anterior margin of the cere runs backwards on the side of the bill, towards the angle of the mouth, considerably past the nostrils, before it approaches the cutting margin of the mandible. The short hairlike feathers which clothe it laterally do not conceal the nostrils.

ACCIPITER (ASTUR) PALUMBARIUS.

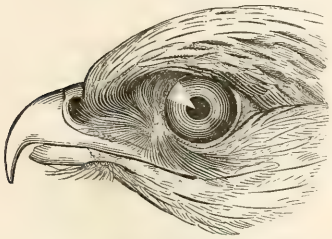
The bill of the *Goshawk* is more compressed and flatter on the sides than that of the Merlin or true Falcons. The curve of its ridge, from the cere to the tip, is somewhat less than a quadrant of a circle of three-quarters of an inch radius. The length of the cere is proportionably greater than in the Merlin, and it is not so much arched; in consequence of which, the whole ridge has a more elliptical curve. The cutting margin of the mandible has an obtuse lobe opposite the nostrils, but wants the acute tooth of the true Falcons, near the point of the bill. The lower mandible has entire margins, and is rounded at its tip—not truncated, as in the Falcons. The nostrils are large, nearly round, have no central column, open obliquely forwards close to the margin of the cere, and are mostly covered by the wiry feathers of the cere.

BUTEO VULGARIS.



In the *Common Buzzard* the bill has a more lengthened form and is equally compressed towards its tip, as in the Goshawk; but it is more swelled out at the base, where it is covered by cere. It is weaker; the depth from the ridge to the cutting margin at the nostrils being considerably less than in the latter bird; in consequence of which, the hooked point is longer. There is a conspicuous obtuse lobe on the cutting margin anterior to the nostrils. The lower mandible is worn on its margin opposite this lobe, and is obliquely truncated at its end. The nostrils, smaller and with more membranous margins than in the Goshawk, open obliquely downwards, and have no central pillar. The anterior margin of the cere runs down to the margin of the mandible opposite the nostrils.

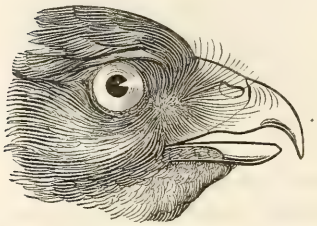
BUTEO LAGOPUS.



The curve of the ridge of the bill of the *Rough-legged Falcon* is equal to that of the Goshawk, and its cere is still shorter; but the depth of the upper mandible at the nostrils is considerably less, and it is destitute of a marginal lobe; the rictus being almost quite straight from the angle of the mouth to the sudden curve of the hooked tip. The nostrils are large, roundish, and open obliquely forwards close to the margin of the cere. They are partially covered by black hairs, proceeding from among the close white down which clothes the space between the orbit and nostrils. The crown of the head is more convex than that of the Goshawk or Common Buzzard.

BUTEO (CIRCUS) CYANEUS.*

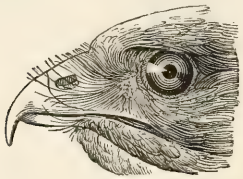
Specimen No. 2. Female. (Vide p. 62.)



In this mature female *Hen-Harrier* the bill is more compressed and flattened on the sides, particularly posteriorly, than in any of those figured above, although its ridge is proportionably more rounded. The cere covers a greater portion of the ridge than in the preceding; but its anterior margin curves back beneath the nostrils, and runs nearly to the angle of the mouth, before it is lost on the cutting margin of the mandible. The depth of the upper mandible at the nostrils is about equal to that of the Common Buzzard ; and there is a small, but distinct lobe on the margin of the mandible a little anterior to the nostrils. The nostrils, oval and longitudinal, open obliquely forwards, extend close to the margin of the cere, and are nearly concealed by the black hairs which spring from the lores. The lower mandible is rounded at its tip, and its margins are more incurved than in the preceding Falcons.

BUTEO (CIRCUS) CYANEUS.

Specimen No. 8. Young female. (Vide p. 64.)



The bill of this specimen is destitute of a lobe on the cutting margin of the upper mandible. (Vide pp. 58 and 59.)

* Since the preceding pages were sent to the press, I have had an opportunity, through the kindness of Mr. Yarrell, of comparing the eggs of the English Hen-Harrier with those taken from the nest of the Harrier on the plains of the Saskatchewan, as mentioned in p. 55. The latter, which measure exactly 1·81 inch. in length, are two-tenths of an inch longer than the English ones.

STRIGIDÆ.—*OWLS.*

If our imperfect knowledge of the groups among the *Falconidæ* debars us from the power of discriminating the genera from the sub-genera, and even prevents us from understanding the properties of the primary groups, still more deficient are we in those data upon which, as we conceive, an insight into the natural arrangement of the *Strigidæ* may be acquired. As a whole, they present an assemblage of birds as united among themselves as they are distinct from all others. There is, we believe, no one species yet discovered which even a common observer would not immediately pronounce to be an Owl, or would be in danger of confounding either with a Hawk or Goatsucker, the only two groups to which the Strigidæ are related in immediate affinity. Yet, although this relationship is too obvious to be doubted, it must be confessed that a considerable *hiatus* intervenes between both. Whether these will be lessened by future discoveries, or whether the Owls, like the Parrots, are in some degree an isolated group, whose aberrant forms no longer exist, are points which may always remain in obscurity.

To state our objections against the attempts that have been made to arrange the modern genera of Strigidæ in a circular series, without at the same time offering a disposition more agreeable to nature, would be useless. It is obvious that, until the first principles of their affinities have been studied, we shall be building without a foundation. The extraordinary development and construction of the ear, by which the Owls are so strikingly distinguished from all other birds, is clearly that feature to which we should first direct our attention; and a correct knowledge of this organ, in its variations of structure through the subordinate groups, should precede all attempts at general combination. How much this has been neglected is well known. "We cannot sufficiently regret," observes the able continuator of Wilson, "that authors should be so unanimous in neglecting this important character of the ears in Owls." (Bon., *Syn.*, p. 436.) With this acknowledged fact before us, with the insignificant number of species for consultation to be found in our museums, and with the artificial combinations that have resulted from relying upon books and prints, rather than upon personal observation, we consider all attempts to combine the modern groups among the Strigidæ into a circular series, as somewhat speculative, and certainly not warranted by any evidence that has yet been brought forward on the subject.—Sw.

[18.] 1. Strix otus. (Linn.) *Long-eared Owl.*

Genus. Strix. Linn. *Sub-genus.* Asio. Antiq.
Long-eared Owl. Penn. *Arct. Zool.*, ii., p. 229, sp. 115.
Strix otus. Lath. *Ind.*, i., p. 58.
Long-eared Owl. (*Strix otus.*) Wilson. *Orn.*, vi., p. 73, pl. 51, f. 3.
Strix otus. Temm., i., p. 102. Selby. *Brit. Orn.*, 8vo., p. 52. Bonap. *Syn.*, p. 37, No. 26.
Cuvier, *Règ. An.*, Second edit., i., p. 341.
Ammisk-oho. (*Beaver-Owl.*) Cree Indians.

This bird, which is an inhabitant of both hemispheres, has been found in America as far north as latitude 60°, and probably exists as high as the forests extend. It is plentiful in the woods skirting the plains of the Saskatchewan, frequents the coast of Hudson's Bay only in the summer, and retires into the interior in the winter. It resides all the year in the United States, and perhaps is not a rare bird in any part of North America; but, as it comes seldom abroad in the day, fewer specimens are obtained of it than of the other Owls. It preys chiefly on quadrupeds of the genus *arvicola*, and in summer destroys many beetles. It lays three or four roundish white eggs, sometimes on the ground, at other times in the deserted nests of other birds in low bushes. Mr. Hutchins says it lays in April, and that the young fly in May. The Indians brought me a specimen, killed at the nest, which was in a bush, and contained one egg, in May; and Mr. Drummond found a nest on the ground, in the same neighbourhood, containing three eggs, on the 5th of July, and killed both the birds. Wilson says that the young are greyish-white until nearly full grown, and roost during the day close together on the limb of a tree, amid the thickest of the foliage. On comparing the above-mentioned eggs with those of the English Long-eared Owl, the American ones proved to be smaller, measuring only an inch and a half in length and 1·27 inch. in breadth; while the English ones measured 1·8 inch. in length, and 1·54 in breadth. The form and colour were the same in both.

DESCRIPTION

Of a *male*, killed at Carlton House, 5th July, 1827.

Colour.—*Bill* and *claws* bluish-black. *Irides* reddish-orange. The wiry feathers at the base of the bill, forming part of the *facial circle*, are greyish-white, with black shafts and tips; the posterior broader half of the circle covering the operculum of the concha is dull yellowish-brown,

margined or bounded posteriorly with blackish-brown: the interior of the circle, forming the immediate border of the orbit, is blackish. The belt of velvety feathers on the posterior border of the concha, and which meets with its fellow on the throat, is dark umber-brown, finely mottled with white. The *egrets* are liver-brown, the interior margins of the feathers mottled with white. On the *dorsal aspect* the ground colour is dark liver-brown; which on the forehead and crown is finely speckled with white; on the neck the dark-brown occupies the centre of each feather, and the margins are pale yellowish-brown, with indented white spots, that are finely dotted with dark-brown. The back, scapularies, tertiaries, and greater part of the lesser wing coverts, have the brown ground crossed by bars of white, which again include indented bars of brown, the resulting general effect being a fine mottling. A band passes along the upper margin of the wing, on which there are no white spots; but the dark-brown is sparingly dotted with yellowish-brown. The quill feathers are liver-brown, crossed by seven bands of yellowish-brown, more or less mottled with white. The *tail* is crossed by about eight pale yellowish-brown or whitish bars, finely mixed with dark-brown, and alternating with as many liver-brown bars.

Under surface.—On the neck and breast the feathers are liver-brown in their centres and white or yellowish-brown on their margins, producing an assemblage of large spots. On the belly they are white, crossed by narrow distinct liver-brown bars. The plumage of the whole ventral aspect, as well as of the dorsal, is yellowish-brown at the base, which partially shows. The linings of the wings are white, tinged with yellowish-brown and marked with some dark-brown blotches. The insides of the primaries are clove-brown, with large buff-coloured bases and blotches opposite to the pale bars on the exterior surfaces. The under surface of the tail is buff-coloured towards the base and greyish towards the point, and is crossed by eight or nine narrow brown bars. The long outer thigh feathers are deep yellowish-brown, with a few liver-brown bars on their tips. The legs and feet are unspotted yellowish-brown.

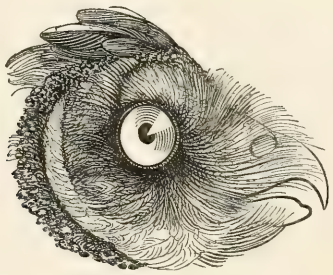
Form, &c.—The *bill*, having a flat elliptical curvature, is covered with cere on the ridge about half its length. *Nostrils* oval, oblique. *Facial circle* moderately large. *Concha* extending from above the posterior angle of the orbit to behind the limb of the lower jaw, being about an inch and a quarter long, with a moderately broad operculum of corresponding length. *Egrets* an inch and a half long, very conspicuous, composed of six or more feathers. Folded *wings* very little shorter than the tail. The second quill feather is the longest, the third is scarcely shorter; the first rather exceeds the fourth, and both are an inch shorter than the second; the remaining ones diminish each in succession from three-quarters to half an inch. The inner web of the first primary is strongly sinuated near the point, and the outer web of the second is more obliquely narrowed higher up. The outer web of the first and that of the second below the sinuation have the points of the barbs strongly reverted: this is not the case with the third, as it is in *Strix Virginiana*. *Tail* very slightly rounded, the outer feathers being only a quarter of an inch shorter than the central ones. *Tarsi* closely covered with moderately long feathers; and the upper surface of the *toes* clothed by shorter feathers, which do

not reach beyond the roots of the nails, where two or three scales are exposed. The middle *nail* is the longest, the first nearly equals it; both are grooved beneath, and the former has a sharp inner edge. The hind and outer nails are rounded beneath: none of them are much curved.

Dimensions
Of the *male*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	17	0	Length of the bill from the angle of the mouth in a straight line	1	3
,, of the tail	6	6	,, of the tarsus	1	7
,, of the longest quill feather	11	0	,, of the middle toe	1	2
,, of the bill on the ridge	1	3	,, of the middle nail	0	9

The *female*, which was killed in company with the above, was scarcely of larger dimensions, and differed only slightly in the parts tinged with yellowish-brown, having a more intense colour. The facial circle was rather browner. Another female, killed six weeks earlier in the season, was precisely similar.



The setaceous feathers at the base of the bill are represented as very few in this cut of the head of the *Long eared Owl*, in order to exhibit the cere and nostrils, and a correct outline of the bill.

[19.] **2. Strix brachyota.** (Latham.) *Short-eared Owl.*

Genus. Strix. Linn. *Sub-genus.* Asio. Antiq.
Strix brachyotos. Forster. *Phil. Trans.*, lxii., p. 384, No. 2.
Short-eared Owl. Lath. *Syn.*, i., p. 124, sp. 9. Penn. *Arct. Zool.*, ii., p. 229, sp. 116. Wilson, iv., p. 64, pl. 33, f. 3. Male.
Strix brachyotos. Temm., i., p. 93. Selby. *Brit. Orn.*, 8vo., p. 54. Bonap. *Syn.*, p. 37, No. 29.
Tho-thos-cau-sew. Cree Indians. (Hutchins.)

This Owl is common to both continents, and is very generally diffused in the temperate and colder regions. It is a summer visitor to the fur-countries, arriving as soon as the snow disappears, and departing again in September. We observed it as far north as latitude 67°; and a female, killed at Fort Franklin on the 20th of May, contained several pretty large eggs nearly ready for exclusion. It is found in the winter as far south as Pennsylvania; in summer is by no means rare in the fur-countries, and, as it hunts frequently for its prey in the daytime, is often seen. Its principal haunts are dense thickets of young pine-trees, or dark and entangled willow clumps, where it sits on a low branch, watching assiduously for mice. When disturbed, it flies low for a short distance, and then hides itself in the heart of a bush, from whence it is not easily driven. Its nest, formed of withered grass and moss, is placed on a dry spot of ground; and, according to Mr. Hutchins, it lays ten or twelve small, round, white eggs. This is a very unusual number for a bird of prey to lay; but a fact, mentioned by Bewick, that twenty-eight individuals of this species have been counted together in a turnip-field, seems to be equally extraordinary. Perhaps it migrates partially in Europe as well as in America, and assembles in flocks previous to leaving its breeding-places.—R.

If we are to consider, with M. Savigny, the *S. flammea* as the type of this family, we observe in the present species a much closer approximation to that form than to the typical Horned Owls. This is exhibited in the prolongation and slight curvature of the bill, in the size and direction of the nasal aperture, and in the more lengthened tarsi, but much more in the full facial disk, and the very great size of the operculated ears. The toes are but thinly feathered; and these feathers, assuming more the appearance of hairs, do not cover the base of the claws. The wings are ample, and extend to the end of the tail. The first quill is nearly as long as the third, and this alone is deeply emarginate on its inner web close to

the tip, as in the typical Falcons; the second quill is the longest, and is the only one slightly emarginate on its outer web. All these characters belong likewise to the Long-eared Owl, the only apparent variation being in the second and longest quill feather, which in the latter bird has a deep notch near its tip.—Sw.

DESCRIPTION

Of a *female*, killed at Fort Franklin, 20th May, 1826. Eggs fully formed were contained in the oviduct.

Colour of the *facial circle* at the base of the bill white, with a slight intermixture of black hairs; posteriorly it is dark blackish-brown close to the orbit, then yellowish-brown mixed with white, and lastly the tips of the soft velvety feathers behind the auditory opening exhibit a spotted mixture of dark umber and bright yellowish-brown, which colours extend across the throat immediately behind the lower jaw. The *egrets* are coloured like the adjoining plumage, and, being short, are scarcely visible. The plumage on the *dorsal aspect* is variegated by liver-brown and light yellowish-brown, the latter colour occupying the margins of the feathers. The *primaries* have a clear wood-brown colour, approaching to buff, crossed by two irregular bars of liver-brown, and also tipped for two inches with the same colour. The outer webs of the *secondaries* are liver-brown, crossed by five mottled bars of wood-brown; their inner webs are of the latter colour, indented with processes of liver-brown proceeding from the shafts. The *tail* is crossed by six wood-brown bars, alternating with five liver-brown ones, its tip being of the former colour.

Under surface of the neck coloured like the back, but the paler margins of the feathers are broader. The long feathers covering the sides of the belly are yellowish-brown, with narrow streaks of liver-brown on their shafts. The vent feathers, under tail coverts, and feathers of the thighs and feet, are yellowish-brown, without spots. The under surface of the tail is buff-coloured, with five narrow broccoli-brown bars. The linings of the wings are yellowish-brown, with blotches of dark-brown. *Bill* and *claws* black. *Irides* bright gamboge-yellow.

Form.—*Bill* elliptically curved from its base, the part covered with cere somewhat inflated; its point compressed with a very obtuse ridge. *Nostrils* oval, oblique. *Facial circle* of wiry feathers complete, but not large. *Concha* forming a semicircle, with a rather narrow *operculum* of corresponding length. Tips of the folded *wings* falling about an inch and a half short of the end of the tail. The second primary is the longest; the third is a quarter of an inch, and the first half an inch shorter; the others diminish in succession about three-quarters of an inch each. The whole of the outer barbs of the first primary and those at the tip of the second have their points reverted. The outer web of the second primary and inner one of the first are sinuated. The *feet* are covered to the claws with short feathers. The *claws* taper considerably and are very sharp; the middle one is the longest, the inner one is next to it in size, and the hind one is the smallest; the latter and the outer one are rounded beneath, the two others are grooved, and the middle one has a very sharp inner edge.

STRIX CINEREA.

London Printed for John Murray Bookseller to the Admiralty

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	17	0	Length of the cere on its ridge	0	8
„ of the tail	6	6	„ of the tarsus	1	6
„ of the longest quill feather	11	6	„ of the middle toe	1	4
„ of the bill measured on its ridge	1	4	„ of its claw	0	11

Another specimen, of the same size with the preceding, has more of the yellowish-brown colour in its plumage, and a bill two lines shorter, with a more tumid cere. A third, also of equal size, has a bill of an intermediate form between these two.

[20.] 3. Strix cinerea. (Gmelin.) *Great Cinereous Owl.*

Genus. Strix. Linn.
Cinereous Owl. Lath. *Syn.*, i., p. 134, sp. 19.
Sooty Owl. Penn. *Arct. Zool.*, ii., p. 232, No. 120.
Strix cinerea. Gmelin. *Syst.*, i., p. 291. Lath. *Ind.*, i., p. 58, sp. 22.
Strix fuliginosa. Shaw. *Gen. Zool.*, i., p. 244.
Strix cinerea. Vieillot. *Enc. Méth.*, iii., 1289, No. 43. Idem, *Nouv. Dict.*, vii., p. 23.
Atheeneetoo omeesew. (*Real or Indian Owl.*) Cree Indians.

Plate xxxi.

This imposing bird, the largest of the North American Owls, was first described by Latham from a Hudson's Bay specimen, deposited in the British Museum; and some particulars respecting its habits, communicated to Pennant by Mr. Hutchins, were published in *Arctic Zoology*. It is by no means a rare bird in the fur-countries, being an inhabitant of all the woody districts lying between Lake Superior and latitudes 67° or 68°, and between Hudson's Bay and the Pacific. It is common on the borders of Great Bear Lake; and there and in the higher parallels of latitude it must pursue its prey, during the summer months, by daylight. It keeps, however, within the woods, and does not frequent the barren grounds, like the Snowy Owl, nor is it so often met with in broad daylight as the Hawk-Owl, but hunts principally when the sun is low; indeed, it is only at such times, when the recesses of the woods are deeply shadowed, that the American hare and the murine animals, on which the Cinereous Owl chiefly preys, come forth

to feed. On the 23rd of May, I discovered a nest of this Owl, built on the top of a lofty balsam-poplar, of sticks, and lined with feathers. It contained three young, which were covered with a whitish down. We got them by felling the tree, which was remarkably thick; and whilst this operation was going on, the two parent birds flew in circles round the objects of their cares, keeping, however, so high in the air as to be out of gunshot: they did not appear to be dazzled by the light. The young ones were kept alive for two months, when they made their escape. They had the habit, common also to other Owls, of throwing themselves back, and making a loud snapping noise with their bills, when any one entered the room in which they were kept.—R.

This bird has the posterior half of its bill covered with cere, rounded or swelled out on the sides, and very slightly arched on the ridge; the curved point moderately compressed, much resembling that of *Strix brachyota*. Its auditory *concha* is much larger than that of *S.* (*Bubo*) *Virginiana*, but very considerably less in proportion than that of *Strix brachyota*, though the operculum is larger than in this bird.—Sw.

DESCRIPTION

Of a specimen, in very perfect plumage, killed at Great Bear Lake, in lat. 65°, supposed to be a *male*.

Colour of the *bill* yellow. *Irides* bright gamboge-yellow. That part of the *facial disk* which is next the bill is composed of hair-like feathers, which are black at the base, and white, with black shafts, upwards: the posterior part of the disk consists of feathers, having short, distinct, wiry-looking barbs of a greyish-white colour, tinged in some places with brown, and crossed by black bars, which form six concentric rings round the orbit. Posterior to the disk there is a semicircle of shining yellowish-brown, barred with blackish-brown, and edged on each side of the throat with white, having a satiny lustre. This semicircle forms the posterior border of the auricular concha, but extends beyond it. The whole *dorsal aspect* is of a dark-brown colour, irregularly barred and mixed with greyish-white, inferior to the brown in quantity, the markings somewhat resembling in form those of *Strix Virginiana*. The *spurious wing feathers* are clove-brown, with some slight white mottlings on their exterior webs; and the primary coverts have the same colour, crossed by three lighter bars. The *primaries* are also clove-brown, and are crossed by from six to eight bars, of which the five next the quills are greyish-white, mixed in a mottled manner with an equal quantity of brown; the other bars next the tips are merely a shade lighter than the intervening spaces. The *secondaries* and *tertiaries* are barred like the bases of the primaries. The *tail* is clove-brown, crossed by eight or nine bars, which are each formed of two white lines, edged and separated by brown; the last bar occupies the tip of the tail. The *ventral aspect* is clove-brown, with short transverse bars of white, that do not reach the shafts of the feathers. The *feet* are greyish-white, finely barred with brown.

Form, &c.—*Head* large. *Bill* broad above, tumid on the sides, and scarcely arched as

far as the cere extends, which is half its length; from the cere to the tip it is curved and somewhat compressed. The cutting margin of the upper mandible is not sinuated. The lower mandible is truncated at the tip, and is obtusely notched on the side near the tip. The *nostrils* are pretty large and nearly round. The *cere* is covered on the sides with hair-like feathers, which curve upwards and conceal the nostrils. The *eyes* are small, considering the great size of the bird. The facial disk is large. The *concha* is also large, of a transversely oval form, and is capable of being closed by the large flap or operculum which forms the posterior part of the facial disk. The margin of this operculum is formed of a dense row of short brown feathers, having flattened quills. The posterior border of the concha is clothed with feathers, having dense webs, soft and velvety to the touch. All these are covered by the margin of the orbital disk when the ear is closed. A row of brown feathers, with white or yellowish-brown tips, mixed with dark-brown, marks the auricular ring, which, except on the forehead, completely encircles the face. The longest feathers of this ring are those at the base of the lower mandible. The *wings*, when folded, reach within four inches of the end of the tail, or as far as the points of the claws when the legs are stretched out. The fourth quill feather equals the fifth, and is longer than the others; the third is a quarter of an inch, and the sixth half an inch, shorter than these; the second is upwards of an inch shorter than the third; the seventh is two inches shorter than the sixth, and the following ones diminish each in succession about three-quarters of an inch. The first is intermediate in length between the ninth and tenth. The two first have the tips of the barbs of their outer webs conspicuously recurved and separated; and the second to the fifth inclusive have their outer webs sinuated towards their points. The five first have their inner webs also sinuated, and the sixth is narrowed towards the point, but not so abruptly as to produce a distinct sinuation. The *tail* is wedge-shaped, consisting of twelve feathers, of which the outer ones are more than two inches shorter than the middle ones: it is very concave below. The *legs* are short and strong. The toes are naked beneath, but are clothed above with feathers, which extend beyond the roots of the nails. There are only two scales at the root of each nail. The *claws* are long, slender, tapering, very acute, and not much curved; the middle one is grooved beneath, has a sharp outer edge, and a very sharp inner one. The inner claw has one edge partially acute; but the hind and outer claws are nearly as much rounded beneath as those of the Osprey. The inner claw is the longest, the posterior and middle ones are a little smaller, and the outer versatile one is the smallest of all.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the point of the bill to the end of the tail	24	0	Length of the inner fore claw	1	6
,, of the tail	12	0	,, of the bill, measured on the ridge	1	10
,, of the longest quill feather	15	0	,, of the bill from the angle of the mouth	1	9
,, of the tarsus	2	0	,, of the cere, measured on the ridge	0	10
,, of the middle toe	1	0	,, of the diameter of the nostrils	0	3

Several other specimens were brought home, some of which differ in size from the preceding; but there is no variation in the colours or distribution of the mark-

ings of any note. They differ from each other, however, in the relative lengths of the quill feathers.

No. 2, of the same dimensions with the preceding (No. 1), and, therefore, most probably of the same sex, has the third quill feather equal to the sixth, and the second to the seventh, the fourth and fifth being the longest, as above.

No. 3, twenty-six inches long, had the quill feathers of the same relative lengths with No. 1.

No. 4, also twenty-six inches long, corresponded in the quill feathers with No. 2.

No. 5, which was the largest, being twenty-seven inches long, had the fourth quill feather two lines shorter than the fifth, the third perceptibly shorter than the sixth, and the second an inch and a half shorter than the third. In all the specimens the first quill feather was a little shorter than the ninth, and between four and four inches and a half shorter than the fourth or fifth.

The ear and operculum of the *Great Cinereous Owl*, showing the roots or quills only of the feathers. One of the ruff feathers of its natural size. The bill of the same, with merely a few of the basal feathers, that the form of the nostrils may be seen.

[21.] 4. Strix nebulosa. (Forster.) *Barred Owl.*

Genus. Strix. Linn. *Sub-genus.* Ulula. Cuvier.
Strix nebulosa, and Grey Owl. Forst. *Phil. Trans.*, lxii., pp. 386, 424. Gmelin. *Syst.*
Barred Owl. Lath. *Syn.*, i., p. 133, sp. 18. Penn. *Arct. Zool.*, ii., p. 234, sp. 122.
Strix nebulosa. Lath. *Ind.*, i., p. 58.
Barred Owl. Wilson. *Orn.*, iv., p. 61, pl. 33, f. 2.
Strix nebulosa. Temm. i., p. 88. Bonap. *Syn.*, p. 38, sp. 30.

This Owl, which is also a native of Northern Europe, was first described by Dr. Forster, from a Hudson's Bay specimen sent to the Royal Society by Mr. Graham. It is probably an inhabitant of the southern districts of the fur-countries only, as we had not the fortune to meet with a specimen to the northward; nor is it mentioned by Mr. Hutchins in his remarks on the birds frequenting the country at the mouth of Nelson river. Wilson says it is one of the most common Owls in the United States. He informs us that it is very frequently observed flying during the day, and that it certainly sees more distinctly at that time than many others of the same genus. It lays four or five nearly globular white eggs, in a nest built in a tree, of sticks intermixed with dry grass and leaves, and lined with smaller twigs. It preys on mice, young rabbits, and grouse; and, according to the same author, both male and female, which differ remarkably in size, scream during the day like a Hawk. Not having seen an American specimen, the following description is borrowed from Wilson.

DESCRIPTION,

Extracted from Wilson's Ornithology.

"The *male* Barred Owl measures sixteen inches and a half in length, and thirty-eight inches in extent. *Upper parts* a pale brown, marked with transverse spots of white. *Wings* barred with alternate bands of pale-brown and darker. *Head* smooth, very large, mottled with transverse touches of dark-brown, pale-brown, and white. Eyes large, deep-blue *, the pupil not perceivable. *Face*, or *radiated circle* of the eyes, grey, surrounded by an outline of brown and white dots. *Bill* yellow, tinged with green; breast barred transversely with rows of brown and white; *belly* streaked longitudinally with long stripes of brown on a yellowish ground; vent plain yellowish-white; thighs and feathered legs the same, slightly pointed with brown; toes nearly covered with plumage; claws dark horn-colour, very sharp. *Tail* rounded, and

* Irides brown.—Temminck.

remarkably concave below, barred with six broad bars of brown and as many narrow ones of white. The back and shoulders have a cast of chestnut. At each internal angle of the eye is a broad black spot. The plumage of the radiated circle round the eye ends in long black hairs, and the bill is encompassed by others of a longer and more bristly kind; these probably serve to guard the eye when any danger approaches it, in sweeping hastily through the woods; and those usually found on Fly-catchers may have the same intention to fulfil; for on the slightest touch of the point of any of these hairs, the nictitant membrane was instantly thrown over the eye.

"The *female* is twenty-two inches long and four feet in extent; the chief difference of colour consists in her wings being broadly spotted with white, the shoulder being a plain chocolate-brown. The tail extends considerably beyond the tips of the wings. The bill is much longer, and of a more golden yellow. Iris of the eye the same as that of the male."

In addition to Wilson's very excellent description, I may remark, that the toes are only half covered with feathers, there being seven transverse scales visible next the claws. The fifth quill feather is the longest *, the fourth equals the sixth, the third equals the seventh, the second equals the eighth, and the first is shorter than the ninth, but longer than the tenth. The tail is tipped with white.

[22.] 5. Strix (Bubo) Virginiana. (Gmelin.) *Virginian Horned Owl.*

Genus. Strix. Linn. *Sub-genus.* Bubo. Cuvier.
The Great Horned Owl. (*Otus Americanus.*) Edwards, pl. 60.
Horned Owl. Ellis. *Huds. Bay*, p. 40, t. 2.
Duc de Virginie. Buff. *Planch. Enl.*, 207, f. 1.
Virginian Eagle-Owl. Lath. *Syn.*, i., p. 119, sp. 2. Idem. *Suppl.* p. 40.
Eagle-Owl. Penn. *Arct. Zool.*, ii., p. 228, No. 114. (The author deeming it to be a variety of the Eagle-Owl of *Brit. Zool.*)
Strix Virginiana. Lath. *Ind.*, i., p. 52, sp. 2. Vieillot. *Ois. de l'Am.*, i., pl. 19.
Great Horned Owl. (*Strix Virginiana.*) Wilson, vi., p. 52, pl. 50, f. 1.
Strix Virginiana. Vieillot. *Enc. Méth.*, 1282. Bonap. *Syn.*, p. 37, No. 27.
Netowky-omeesew. Cree Indians. (Mr. Hutchins.)
Otowuck-oho. Crees of the Plains of the Saskatchewan.

This large night-bird is peculiar to America, and most probably inhabits that continent from one end to the other; Cuvier being of opinion that the *Strix Magellanica* of the *Planches Enluminées* (585) differs from it merely in having

* In a specimen in the British Museum. Forster, in his original description, says, "Remex sextus reliquis longior, apice magis nigricans; primus vero reliquis primoribus brevior. Remiges reliqui pallidiores obscurius fasciati."

browner tints of colour: neither is it uncommon on the Table Land of Mexico. Specimens that were sent to John Taylor, Esq., F.R.S., from the vicinity of Real del Monte, have been compared, by Mr. Swainson, with those procured in the northern regions. They presented no other difference than what might be expected in regard to the colour of individuals from localities so widely different. In those from Mexico the rufous tints of the plumage were more general and much brighter *. The Virginian Horned Owl is found in almost every quarter of the United States, and occurs in all parts of the fur-countries where the timber is of a large size. Its loud and full nocturnal cry, issuing from the gloomy recesses of the forest, bears some resemblance to the human voice uttered in a hollow sepulchral tone, and has been frequently productive of alarm to the traveller, of which an instance occurred within my own knowledge. A party of Scottish Highlanders, in the service of the Hudson's Bay Company, happened, in a winter journey, to encamp after nightfall in a dense clump of trees, whose dark tops and lofty stems, the growth of centuries, gave a solemnity to the scene that strongly tended to excite the superstitious feelings of the Highlanders. The effect was heightened by the discovery of a tomb, which, with a natural taste often exhibited by the Indians, had been placed in this secluded spot. Our travellers having finished their supper, were trimming their fire preparatory to retiring to rest, when the slow and dismal notes of the Horned Owl fell on the ear with a startling nearness. None of them being acquainted with the sound, they at once concluded that so unearthly a voice must be the moaning of the spirit of the departed, whose repose they supposed they had disturbed, by inadvertently making a fire of some of the wood of which his tomb had been constructed. They passed a tedious night of fear, and with the first dawn of day hastily quitted the ill-omened spot.

The Virginian Horned Owl preys on the American hare, Hudson's Bay squirrel, mice, wood-grouse, &c. It builds its nest of sticks on the top of a lofty tree, hatches in March, and its young, two or three in number, are generally fully fledged in June. Its eggs are white.—R.

In the size and structure of the ears, in the imperfect facial disk, in the shortness of the tarsi, and in the relative proportions of the claws, there is a close resemblance between this bird and *Strix nyctea*. The first quill feather is shorter than the fifth, but is nearer to it than to the sixth in length; the second and fourth

* Lewis and Clark state, that they saw the "Large Hooting Owl," to the westward of the Rocky Mountains, only on the Kooskooskee; and that it was of the same size and form with the Owl of the United States, though its colours, particularly the reddish-brown, seemed deeper and brighter.

are equal, and very little shorter than the third, which is the longest. This structure must be productive of a weaker flight than that of the Short or Long-eared Owls (*Strix otus* and *brachyota*).—Sw.

DESCRIPTION

Of a specimen killed at Fort Chepewyan.

Colour.—*Bill* and *claws* pale bluish-black. *Irides* bright-yellow. *Facial circle* of a deep black immediately round the orbit; composed of white, mixed with black bristly feathers at the base of the bill, and posteriorly of yellowish-brown wiry feathers, tipped with black, and having black shafts. The black tips form a conspicuous border to the facial circle posteriorly; but the small feathers behind the auditory opening differ little in colour and appearance from the adjoining plumage of the neck. *Egrets* composed of ten or twelve dark-brown feathers, spotted at the base of their outer webs and along their whole inner ones with yellowish-brown. Forehead and crown dark blackish-brown, finely mottled with greyish-white, and partially exhibiting the yellowish-brown base of the plumage. The whole *dorsal* plumage is yellowish-brown for more than half the length of each feather from its base, and dark liver-brown upwards, finely barred and indented with undulated white lines. More of the yellowish-brown is visible on the neck and between the shoulders than elsewhere. The *primaries* present six or seven bars of dark umber or liver brown, alternating with six bars, which on the outer webs are brownish-white, finely speckled with dark-brown, and on the inner webs are of a bright buff-colour, sparingly speckled with the dark-brown near the shafts. The tips of the feathers have the same mottled appearance with the paler bars of the outer webs. The secondaries and tail feathers are similarly marked to the primaries, but show more white on their outer webs. There are six liver-brown bars on the *tail*, the last of which is nearly an inch from its end.

Under surface.—Chin white, succeeded by a belt, extending from ear to ear, of liver-brown feathers, having pale yellowish-brown margins. Behind the belt there is a gorget-shaped mark of pure white. The rest of the lower surface of the body is crossed by very regular transverse bars of white, alternating with bars of equal breadth (three lines) of liver-brown, shaded with chocolate-brown. The yellowish-brown base of the plumage is likewise partially visible; there is a white mæsial line on the breast, and, when the long feathers covering the abdomen are turned aside, a good deal of white appears about the vent. The outside thigh feathers are yellowish-brown, with distant cross bars of liver-brown; and the legs and feet are brownish-white, with brown spots. The linings of the wings are white, with bars of liver-brown, margined by yellowish-brown. The insides of the primaries are bright-buff, crossed by broad bars of clove-brown. On the under surface of the secondaries the clove-brown bars are much narrower. The under tail coverts are whitish, with distant bars of liver-brown. The under surface of the tail has a slight tinge of buff-colour, and is crossed by mottled bars of clove-brown.

Form, &c.—*Head* of moderate size. *Bill* very strong, curved from the base with an obtuse ridge; its cutting margin very obtusely lobed in the middle. *Cere* moderately long. *Nostrils*

broadly oval. *Facial circle* incomplete above the eye. *Auditory opening* only three-quarters of an inch long, oval, without an operculum. *Scapularies* rather long. *Tertiaries* long, falling only about an inch short of the tip of the wing. The *wings*, when folded, fall four inches short of the end of the tail. The wing feathers have broad webs. The third *quill feather* is the longest; the second and fourth are scarcely perceptibly shorter; the fifth is three-quarters of an inch, and the first an inch and a quarter shorter; the sixth and following ones diminish in length from three-quarters to half an inch in succession. The inner webs of the first and second are strongly sinuated, and that of the third less so; the outer webs of the second, third, and fourth, are distinctly undulated or obliquely sinuated. The margins of the outer one, and that of the second and third below their sinuations, have the points of the barbs strongly reverted. The feathers of the *tail* have broad webs. The tail is slightly rounded, the exterior feathers being less than three-quarters of an inch shorter than the middle ones. *Feet* clothed to the nails, at the root of which two large scales become visible when the feathers are turned aside. Middle and fore claws of the same length, both grooved beneath, and the former having an acute inner edge. Claws reaching within less than two inches of the end of the tail. The hind and outer one are smaller, and are slightly grooved at the base beneath. The middle and outer toe are connected at the base by a very short, thick web.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	26	0	Length of the tail	11	6
,, of the bill, measured along its ridge	2	0	,, of the longest quill feather	14	0
,, ,, from the angle of the mouth to the tip	1	8	,, of the tarsus	2	3
,, of the cere on its ridge	0	9	,, of the middle toe	1	9
			,, of the middle nail	1	3

Another specimen, killed by Mr. Drummond on the Rocky Mountains, measures two inches less in length, and differs generally from the preceding in being of a darker hue above, with finer and less copious white mottling. The yellowish-brown colour of the base of the plumage is also less bright, and the facial circle is of a more sombre hue. Its bill, also, is more compressed.

[23.] 6. Strix (Bubo) Arctica. (Swainson.) *Arctic or White Horned Owl.*

Genus. Strix. Linn. *Sub-genus.* Bubo. Cuvier.

Sp. Ch. Strix (*Bubo*) arctica, *alba super hic illic brunnescens lineis crebris transversis nigrescentibus undulata, subter candida: jugulo abdomine tectricibus alarum internis pedibusque intactis; gutture pectore hypochondriisque fasciatis.*

Sp. Ch. Arctic or White Horned Owl, white, tinged here and there on the dorsal aspect with brown, and marked with crowded transverse blackish-brown bars and lines; under plumage having a brilliant white ground colour, unspotted on the fore part of the neck, belly, under wing coverts, and feet; banded on the throat, breast, and flanks.

Plate xxxii.

This very beautiful Owl appears to be rare, only one specimen having been seen by the members of the Expedition. It was observed flying at mid-day in the immediate vicinity of Carlton House, and was brought down with an arrow by an Indian boy. I obtained no information respecting its habits.

The only species mentioned by systematic writers that resembles this bird is the *Strix Scandiaca*, which Linnæus, according to Pennant, described solely from a painting of Rudbeck's. The same author mentions, however, that its existence was confirmed by Mr. Tonning, of Drontheim; yet Temminck considers it to have been merely a young Snowy Owl, on which two fictitious egrets had been placed. The discovery of our species renders the existence of the Scandinavian Eared Owl more probable; but the descriptions handed down to us of the latter are so imperfect, that it can be considered only in the light of a nominal species until specimens of it are obtained. Wilson mentions a "White Owl," supposed to be a variety of *Strix Virginiana*, as having been seen in the United States; but, no details being given, it cannot now be ascertained whether it was our bird or not *.—R.

In this remarkable species the facial disk is very imperfect; the ears small and without an operculum, as in *Strix Virginiana;* the ear feathers ample; but the disk even smaller than in the last-mentioned bird, and the tarsi somewhat longer. The toes are similarly connected. The tail is of moderate length, and considerably rounded. The bill is strong, and rather short.—Sw.

* The *Wapacuthu Owl* of Pennant and Latham, a Hudson's Bay bird, resembles our *White Horned Owl* considerably in the colours of its plumage, but differs essentially in the want of egrets, which in our bird are long and highly developed. Neither Pennant nor Latham appear to have seen the Wapacuthu, their descriptions corresponding word for word with Mr. Hutchins's manuscript notes. The Indian word *Wapacuthu* means "White Owl," and is applied also to the *Strix nyctea*, although the common term for the latter is *Wapo-ohoo.* Mr. Hutchins says the Wapacuthu is an inhabitant of the woods, makes its nest in the moss on dry ground, and lays from five to ten white eggs in May. The young fly in June, and are entirely white for some time afterwards. The Wapacuthu preys on mice and small birds, which it generally kills for itself. The Expedition did not pass near Severn River, where Mr. Hutchins resided.

BUBO ARCTICUS.

London, Printed for John Murray, Bookseller to the Admiralty, January 1st 1829

DESCRIPTION

Of a specimen killed in May, 1827, at Carlton House.

Colour of the *bill* and *claws* bluish-black. *Irides* yellow. The *face* is white, bounded posteriorly by blackish-brown, succeeded by white, which two latter colours are continued in a mixed band across the throat. *Egrets* coloured at the base like the adjoining plumage, the longer feathers tipped with blackish-brown, their inner webs white, varied with wood-brown. The whole *dorsal aspect* is marked with undulated lines or fine bars of dark umber-brown, alternating with white; the markings bearing some resemblance to those of the Virginian Owl, but being much more lively and handsome. On the greater wing coverts, on the inner half of the scapularies, and also partially on the neck and lesser wing coverts, the white is tinged or replaced by pale wood-brown. The *primaries* and *secondaries* are wood-brown, with a considerable portion of white along the margins of their inner webs. They are crossed by from five to six distant umber-brown bars on both webs, the intervening spaces being finely speckled with the same. Near the tips of the primaries the fine sprinkling of the dark colour nearly obscures the wood-brown. On the tertiaries the wood-brown is mostly replaced by white. The *tail* feathers are white, deeply tinged on their inner webs by wood-brown, and crossed by six bars of umber-brown about half as broad as the intervening spaces: their tips are white.

Under surface.—Chin white. *Throat* crossed by the band above mentioned, behind which there is a large space of pure snow-white, that is bounded on the breast by blotches of liver-brown situated on the tips of the feathers. The *belly* and long plumage of the flanks are white, crossed by narrow, regular bars of dark-brown. The vent feathers, under tail coverts, thighs, and feet, are pure white. The linings of the wings are also white, with the exception of a brown spot on the tips of the greater interior coverts.

Form, &c.—*Bill* strong, curved from the base, moderately compressed towards the tip, with a very obtuse ridge. *Nostrils* large, roundish, covered by the wiry feathers proceeding from the base of the bill. *Facial disk* small, incomplete above the orbit. *Auditory concha* oval, without an operculum. Opening of the auditory canal small. *Egrets* more than two inches long, each composed of six or seven feathers, and situated behind the upper end of the black band bounding the face. The folded *wings* fall about three inches and a half short of the end of the tail. The webs of the quill feathers are very broad, and the wing is very concave beneath. The second and third *quill feathers* are the longest; the fourth is about two lines shorter; the first and fifth are an inch shorter; the others to the tenth diminish each in succession about half an inch. The inner webs of the three first, and the outer ones of the second and third, are sinuated. The points of the whole of the outer barbs of the first, and of the barbs near the points of the second and third, are strongly recurved. The tertiaries are very long, their tips passing that of the sixth primary. The *tail* is rounded, the outer feathers being an inch shorter than the central ones. The plumage of the sides of the belly is long, and hangs down over the thighs. The thigh feathers are very downy, but are not long. The vent feathers and under tail coverts are also very downy. The *tarsi* are rather long, and the toes are moderately long; they are clothed to the roots of the nails by a close coat of hairy feathers. Two transverse scales are partially visible at the root of each claw. The *claws* are

strong, moderately long, sharp, and very much curved: the posterior one is rounded beneath; the outer versatile one is slightly flattened beneath, and the other two are grooved, the middle one having a sharp inner edge. The inner toe is the longest, and the next to it in length is the middle one; the other two are considerably smaller.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	23	6	Length of the tail	8	6
,, of the bill on its ridge	1	9	,, of the longest quill feather	12	0
,, of the cere	0	9	,, of the tarsus	2	3
,, of the bill, from the angle of the mouth	1	9	,, of the middle toe	1	6
			,, of its claw	1	3

[24.] 7. Strix nyctea. (Linn.) *Great Snowy Owl.*

Genus. Strix. Linn. *Sub-genus.* Surnia. Dumeril.
The Great White Owl. (*Aluco albus diurnus.*) Edwards, pl. 61.
Strix nyctea. Forster. *Phil. Trans.*, lxii., p. 385. A totally white specimen.
Snowy Owl. Lath. *Syn.*, i., p. 132, sp. 17. *Suppl.*, i., p. 45, sp. 17. Penn. *Arct. Zool.*, ii., p. 233, No. 121.
Strix nyctea. Lath. *Ind.*, i., p. 57, sp. 20.
Ermine Owl. Idem. *Syn.*, *Second Suppl.*, p. 60, sp. 7.
Strix candida. Lath. *Ind.*, *Suppl.*, p. xiv., sp. 3.
Snow Owl. (*Strix nyctea.*) Wilson, iv., p. 53, pl. 32, f. 1. Male.
Strix nyctea. Temm., i., p. 82. Sabine. *Parry's First Voy.*, *Suppl.*, p. cxciii., No. 1. Richards., *Append. Parry's Second Voy.*, p. 342. Bonap., *Syn.*, p. 36, No. 24. Selby. *Brit. Orn.*, 8vo., p. 58.
Wapow-keethoo or Wapohoo. Cree Indians. Ookpēēguak. Esquimaux.

This highly beautiful and powerful bird is common in the more northern parts of both hemispheres, frequenting in summer the most remote arctic lands that have been visited, but retiring, with the Ptarmigan, on which it preys, to more sheltered districts in the winter. Even in the latter season, however, it is frequently seen within the confines of the Arctic Circle; though it is not very uncommon at the same period in Canada and the northern parts of the United States; and now and then it has been known to wander as far south as Florida. In Europe it frequents the Feroe and Shetland Islands, and is occasionally killed, even in summer, on the moors of the Orkneys. According to Temminck, it sometimes visits the north of Germany, and is casually seen in Holland. It hunts in the day; and, indeed, unless it could do so, it would be unfit to pass the summer within the Arctic Circle.

When I have seen it on the barren grounds it was generally squatting on the earth, and, if put up, it alighted again after a short flight; but was always so wary as to be approached with great difficulty. In the woody districts it shows less caution, and, according to Hearne, has been known to watch the Grouse-shooters a whole day, for the purpose of sharing in the spoil. On such occasions it perches on a high tree, and, when a bird is shot, skims down and carries it off before the sportsman can get near it. It preys on lemmings, hares, and birds, particularly the Willow-grouse and Ptarmigan. Mr. Hutchins says that it eats carrion; and Wilson informs us that it is a dexterous fisher, grasping its finny prey with an instantaneous stroke of the foot, as it sails along near the surface of the water, or sits on a stone in a shallow stream. I have seen it pursue the American hare on the wing, making repeated strokes at the animal with its foot; but on that occasion, through the intervention of an Indian, it was driven from its quarry. It makes its nest on the ground, and lays three or four white eggs, of which two only are in general hatched. In winter, when this Owl is fat, the Indians and white residents in the fur-countries esteem it to be good eating. Its flesh is delicately white. There is a live specimen, from Hudson's Bay, at present in the gardens of the Zoological Society.

DESCRIPTION

Of an individual killed at Bear Lake, lat. 65°, May, 1826.

Colour white; marked on the dorsal aspect with umber-brown spots. There are no spots on the face or forehead; those on the crown of the head are small, irregular in shape, and situated near the tips of the feathers. The nape of the neck is unspotted; but farther back, near the shoulders, the plumage is brownish at the base, and one or two narrow bars of dull-brown cross each feather near its tip. There are similar bars on the fore part of the back, the scapularies, and the lesser wing coverts. The rump and the tail coverts are almost totally white. The *tail* is marked near its end by three very imperfect bars, consisting of transverse oblong spots, which do not reach either the margins or shafts of the feathers: the outer tail feather on each side is unspotted. The brown spots on the primaries and their coverts are brighter and rather larger than elsewhere, and have mostly a roundish shape. They constitute, on the former, six or seven interrupted bars. The spots on the secondaries are small, and confined to the exterior webs. The plumage on the *ventral aspect* and insides of the wings is white, with the exception of about four broccoli-brown bars near the ends of the primaries, and two or three very imperfect bars of the same colour on the under surface of the tail. The *bill* and *claws* are bluish-black; the *irides* Dutch-orange.

Form, &c.—*Head* small. *Bill* curved from the base, compressed towards the point, sides moderately convex, and the ridge rounded; cutting margin nearly even; gape wide. *Cere* rather short. *Nostrils* large, oval, approaching to round, situated obliquely at the anterior

margin of the cere. *Facial circle* of wiry feathers small and very incomplete, being visible only at the base of the bill and beneath the orbit. The eyebrow projects as in the Falcons, and is clothed with plumage similar to that on the crown of the head. The bristly feathers at the base of the bill project forwards and cover the nostrils. Tips of the folded *wings* about an inch and a half shorter than the tail. The third quill feather is the longest; the fourth is three lines, and the second four or five lines, shorter than the third*; the fifth is an inch and a quarter shorter than the fourth; the first is an inch and a half shorter than the second, or about a quarter of an inch shorter than the fifth; the others diminish successively about an inch each; the second, third, and fourth have their outer webs abruptly narrowed, or notched; and the first to the fourth inclusive have also very deep and abrupt notches on their inner webs. The barbs of the outer web of the first feather have their points reverted and open †: this is also the case, though in a less remarkable degree, on the outer margins of the narrowed part of the three succeeding feathers. The under tail coverts are nearly as long as the tail, and have pretty strong shafts, with very downy webs at their bases. The *tail* is rather short and rounded, its exterior feathers being nearly an inch shorter than the middle ones. The *claws*, when the leg is stretched out, reach within three inches and a half of the end of the tail. The thigh feathers reach to the feet. The *tarsi* are short. The *feet* and *toes* are covered with long white hairlike feathers, which partly conceal the claws: by turning these hairs aside, two scales may be seen at the base of each claw above. The feathers on the back part of the tarsus are particularly long and somewhat downy. The inner claw and the middle one are equal in size, both are grooved beneath, and the latter has a very sharp interior edge. The two others are rounded beneath and are smaller, particularly the hind one, which is the shortest of all. All the claws are much curved and very sharp.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	25	6	Length of the bill in a straight line from the corner of the mouth	2	0
,, of the tail	9	6	,, of the tarsus	1	6
,, of the longest quill feather	16	0	,, of the middle toe	2	0
,, of the bill, measured along its ridge	1	9	,, of its claw, following its curvature	1	6
,, of the cere on its ridge	0	9	,, of the fore claw in a straight line	1	3

Temminck remarks, that the younger the individuals are, the more is their plumage spotted and barred; and that the very old birds are pure white, without

* There is some variation in the lengths of the quill feathers in different specimens. The second, third, and fourth are obviously longer than the others in all, the second and fourth being nearly equal. The first quill feather is sometimes longer than the fifth.

† The different formation of the exterior laminæ of the quill feathers, in Falcons and Owls, does not appear to have excited that attention which the subject deserves. In *Falco sparverius*, and probably in all the kindred species, the external laminæ of the quills are concave, with a semi-central shaft, analogous to the quill itself. The outer vane is formed of still more minute laminæ; but the inner vane, which is by far the broadest, is *perfectly entire*, and of a horny texture, being concave beneath: it thus reposes, with great compactness, upon the next lamina of the quill. In the Owl this structure is beautifully modified to admit a free passage for the air, by which the flight of these birds is noiseless. The horny vane above mentioned is no longer entire, but is split into minute laminæ along its entire length; the end, instead of reposing on the next, is recurved outwards, thus giving the appearance of a dentated margin.—Sw.

any brown spot. These white individuals are, in Wilson's opinion, always males; but, judging from the size of some white specimens I have seen, I should think he is mistaken.

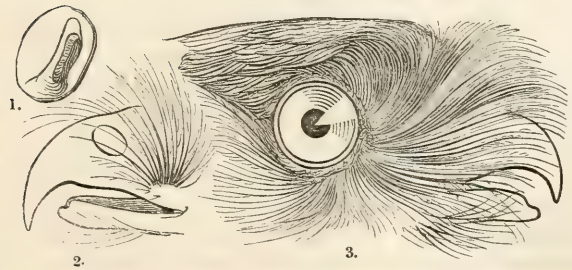
A specimen from Hudson's Bay, preserved in the British Museum, is entirely white, with the exception of a brown spot near the tip of the first quill feather and two on the second feather. The length of the specimen is twenty-six inches.

Another specimen, killed on the eastern declivity of the Rocky Mountains, and from its size supposed to be a female, has the plumage on the dorsal aspect more generally spotted and barred, and also many bars on the long feathers that cover each side of the abdomen. The throat, vent feathers, under tail coverts, and linings of the wings, are, however, pure white. In this, the second and fourth quill feathers are equal to each other and two lines shorter than the third; the first and fifth are also equal to each other, and about an inch and a half shorter than the third.

DIMENSIONS

Of a Rocky Mountain specimen.

	Inches.	Lines.
Length from the tip of the bill to the end of the tail	29	0
„ of the tail	10	0
„ of the longest quill feather	16	6



1. Ear of the *Snowy Owl*. 2. Bill, partly divested of the frontal feathers, to show the nostrils. 3. Profile of the head.

[25.] 8. STRIX FUNEREA. (Lath.) *American Hawk Owl.*

GENUS. Strix. LINN. *Sub-genus.* Surnia. DUMERIL.
The Little Hawk Owl. (*Ulula Accipetri affinis.*) EDWARDS, pl. 62.
Strix funerea. FORSTER. *Phil. Trans.*, lxii., p. 385.
Canada Owl. LATH. *Syn.*, i., p. 142, sp. 29. IDEM. *Suppl.*, i., p. 47.
Hawk Owl. PENN. *Arct. Zool.*, xi., p. 234, sp. 123.
Strix funerea. LATH. *Ind.*, i., p. 62, sp. 35.
Hawk Owl. (*Strix Hudsonia.*) WILSON, vi., p. 64, pl. 50, f. 6.
Strix funerea. TEMM., i., p. 86. SABINE. *Frankl. Journ*, p. 671. BONAP. *Syn.*, p. 35, sp. 23.
Paypaw thee-cawsew, or Cobadecootch. CREE INDIANS.
Theechazza. COPPER INDIANS and CHEPEWYANS.
Ood no hæoot. ESQUIMAUX.

This small Owl, which inhabits the Arctic Circle in both continents, belongs to a natural group, that have small heads destitute of tufts, small and imperfect facial disks, auditory openings neither operculated nor much exceeding those of other birds in size, and considerable analogy in their habits to the diurnal birds of prey. It remains all the winter in high northern latitudes, and is rarely seen so far south as Pennsylvania, and then only in severe winters. Wilson saw only two specimens in the United States. It is a common species throughout the fur-countries from Hudson's Bay to the Pacific, and is more frequently killed than any other by the hunters, which may be partly attributed to its boldness and its habit of flying about by day. In the summer season it feeds principally on mice and insects; but in the snow-clad regions, which it frequents in the winter, neither of these are to be procured, and it then preys mostly on Ptarmigan. It is a constant attendant on the flocks of Ptarmigan in their spring migrations to the northward. It builds its nest on a tree, of sticks, grass, and feathers, and lays two white eggs. When the hunters are shooting Grouse, this bird is occasionally attracted by the report of the gun, and is often bold enough, on a bird being killed, to pounce down upon it, though it may be unable from its size to carry it off. It is also known to hover round the fires made by the natives at night.

DESCRIPTION

Of a specimen killed at Cumberland House, lat. 54°, May, 1827.

COLOUR.—*Bill* pale-yellow or whitish. The wiry feathers forming the imperfect *facial circle* are intermixed with many black hairs at the inner corner of the eye, are greyish-white behind and beneath the eye, and are bounded posteriorly by a line of deep black. The whole

upper surface of the *head* and nape of the neck is brownish-black, regularly and closely studded with round white spots, generally three or five on each feather, of which one occupies the tip, and the others are in pairs, separated by the brown shaft. On the posterior part of the neck the white spots are larger, and on each side of it there is an irregular longitudinal brownish-black band. The rest of the plumage on the *dorsal aspect* has a deep liver-brown ground colour, variously spotted with white. On the space between the shoulders, the adjoining parts of the scapularies, and greater and lesser wing coverts, the white spots are few. On the quill feathers the white is disposed in from three to six semi-oval marks on the margins of both webs, those on the inner webs being the largest. These spots are very conspicuous on the secondaries; but on the sixth, seventh, eighth, and ninth primaries, they are wanting on the outer webs, their site being merely indicated by a fainter shade of the brown. On the posterior part of the back and tail coverts the white is arranged in transverse bars, and predominates over the brown. The *tail* is liver-brown, tipped with white, and is crossed by seven distant narrow, somewhat crescentic white bars.

Under surface.—The long feathers on the sides of the abdomen and thighs, under tail coverts, and linings of the wings, are white, very regularly and perfectly barred transversely with chestnut-brown bands more than half the breadth of the intervening spaces. The bars on the breast and under surface of the neck are narrower. The vent feathers are soiled-white, and are crossed by some faint brown bars. The under surfaces of the quill and tail feathers are clove-brown, with white spots and bars corresponding to those on the exterior surfaces.

Form, &c.—*Bill* nearly concealed by bristly feathers, short, curved from the base, with an obtuse ridge and a very short cere; cutting margin slightly undulated. Lower mandible notched on the side near the point and truncated at the end. *Nostrils* small, rounded. *Head* round, of moderate size. *Facial circle* small, and incomplete above. Scapulary feathers short. Folded *wings* falling three inches and a half short of the end of the tail. The third *quill feather* is the longest, the fourth is scarcely shorter, the second is half an inch shorter, and the fifth three-quarters of an inch shorter than the third or fourth; the following ones are each in succession an inch shorter: the first is a little shorter than the fifth, or about two inches shorter than the third. The inner webs of the first four, and the outer webs of the second, third, and fourth, are sinuated. The outer margin of the first primary only has its barbs slightly recurved. *Tail* long, cuneiform, the outer feathers being an inch and a half shorter than the middle ones. *Tarsi* and *toes* short. Inner and middle *claws* nearly equal to each other, both grooved beneath, and the middle one having a sharp inner edge. The posterior and outer ones smaller, and rounded beneath. Claws partially concealed by the feathers covering the toes.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	18	0	Length of the middle toe	0	9
,, of the tail	8	0	,, of its claw	0	9
,, of the longest quill feather	9	0	,, of the bill along its ridge	1	0
,, of the tarsus	1	0	,, of the bill from the angle of the mouth	1	0

Nine other specimens, killed at Bear Lake, Slave Lake, York Factory, and on the Rocky Mountains, presented no other difference than the white spots, in some of them, being fewer on the neck, between the shoulders, and on the scapularies. Their length varied from 16½ to 17½ inches; but the sexes were not specified.

Head of the *Hawk Owl.* Bill, showing the nostrils. Ear.

[26.] 9. STRIX TENGMALMI. (Linn.) *Tengmalm's Owl.*

GENUS. Strix. LINN. *Sub-genus.* Noctua. CUVIER.
" Strix dasypus. BECHSTEIN and MEYER." (Temminck.)
Strix passerina. FORSTER. *Phil. Trans.*, lxii., p. 385, No. 7.
New species of Owl. PENN. *Arct. Zool.*, ii., *Suppl.*, p. 60.
Strix Tengmalmi. TEMMINCK, i., p. 94. VIEILLOT. *Ency. Méth.*, iii., 1288. IDEM. *Gal. des Ois.*, pl. 23.
Cheepai-peethees, or Cheepomesēēs. (*Death-bird.*) CREE INDIANS.
Shipomosish. HUTCHINS. *MS., et apud* PENN. *Arct. Zool.*, ii., p. 236.

PLATE XXXII.

This species resembles *Strix funerea, Virginiana,* &c., in its short and feathered tarsi; while the size and structure of its ears point out its affinity to those groups which are strictly nocturnal. The bill is short and much curved, the nostrils very convex, and their apertures oval. The wings are considerably rounded.—Sw.

The completely nocturnal habits of this Owl is a proof of the justness of the

STRIX TENGMALMI.

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above remark on its affinity. When it accidentally wanders abroad in the day, it is so much dazzled by the light of the sun as to become stupid, and it may then be easily caught by the hand. Its cry in the night is a single melancholy note, repeated at intervals of a minute or two; and it is one of the superstitious practices of the Indians to whistle when they hear it. If the bird is silent when thus challenged, the speedy death of the inquirer is augured; hence its Cree appellation of Death-bird. Mr. Hutchins informs us that it builds a nest of grass half way up a pine-tree, and lays two eggs in the month of May. It feeds on mice and beetles. I cannot state the extent of its range, but believe that it inhabits all the woody country from Great Slave Lake to the United States. On the banks of the Saskatchewan it is so common that its voice is heard almost every night by the traveller wherever he selects his bivouack. The Countess of Dalhousie sent a fine specimen from Canada to the Edinburgh Museum.—R.

DESCRIPTION

Of a specimen killed at Carlton House, in the end of May.

Colour.—*Bill* whitish on the ridge and at the tip; dark-coloured on the sides. *Facial circle* blackish immediately round the orbit and at the base of the bill; the rest of it white, with an intermixture of black shafts and barbs towards its posterior margin. The belt of velvety feathers on the posterior border of the *concha* is blackish-brown, with a few white spots: there is a greater intermixture of white where the band unites with its fellow under the throat. The ground colour of the whole *dorsal aspect* is an uniform tint of liver-brown. On the forehead this is thickly dotted with round white spots, one only, in general, on each feather near its tip; but, in a few, there is an indication of a pair of spots lower down *. The spots on the occiput are more distant, and they are considerably larger on the back of the neck and between the shoulders, each spot occupying the middle of a feather, and not extending either to the tip or lateral margins. There are only two or three of these spots on the back; but there are a good many on the scapularies, particularly on their inner webs, where they resemble those on the neck in size and number. There are a few distant round spots, of the size of a pea, on the lesser wing coverts. The primary coverts are unspotted, unless on their inner webs. The *primaries* have four or five semi-orbicular spots on the margin of their outer webs, and as many oblong larger spots extending to near the margins of their inner ones. The outer spots of the two first primaries are nearly obsolete. The secondaries have only two spots on their outer webs, but generally about five on their inner ones. The *tail*, of similar colour to the rest of the dorsal surface, is crossed by five narrow interrupted white bands. The white spots forming these bands do not reach the shafts of any of the feathers, and the last band is a quarter of an inch distant from the end of the tail.

* This distinguishes it from *Strix Acadica*, in which the white forms linear streaks along the shafts of the feathers of the head; and it is on account of this mark that we have referred the *Strix passerina* of Forster to the *S. Tengmalmi*. Linnæus, in *Fauna Suecica*, terms our *Strix Tengmalmi*, *Strix funerea*.

The plumage on the *under surface* of the body presents a mixture of white and liver-brown, in nearly equal quantities, disposed in large and not very well defined spots, the white occupying the lateral margins of the feathers. The *base* of the plumage, both above and below, is blackish-grey. The linings of the wings are white, with some blotches of clove-brown; and the insides of the quill and tail feathers are clove-brown, with white spots corresponding to those on their exterior surfaces. The feathers clothing the legs and feet are soiled yellowish-white, with some obscure brown markings.

Form, &c.—*Head* large. *Bill* small, almost concealed by the facial circles, curved from the base, compressed, with an obtuse ridge. *Cere* short, rounded above, and tumid on the sides. *Nostrils* small, transverse, oval. *Facial circle* complete. *Concha* forming almost a semicircle, with a long narrow operculum. There is a fulness of the plumage on the usual site of the egrets. The plumage in general is unusually soft, the barbs of the feathers being very slender and open. The scapularies are short; but the secondaries and tertiaries are long, the latter falling only an inch short of the tips of the wings when folded. The tips of the wings themselves are an inch and a quarter shorter than the tail. The third *quill feather* is the longest, and the fourth very nearly equals it; the second and fifth are equal to each other, and a quarter of an inch shorter than the third; the sixth and following ones become each in succession four or five lines shorter; the first equals the seventh. The inner webs of the first and second primaries are sinuated, and the outer web of the second is undulated or very obliquely sinuated *. The points of the outer barbs of the first primary, of those of the second for half its length, and of those near the point of the third, are reverted. The *tail* is slightly rounded, the middle feather exceeding the exterior one by about a quarter of an inch. *Feet*, when stretched out, reaching within an inch and a half of the end of the tail. *Tarsi* and *toes* short, clothed by long hairy feathers to the roots of the nails, where one scale only becomes visible on putting the feathers aside. *Nails* of moderate size; inner and middle one of equal length, both grooved, and the latter with a sharp inner edge; the other two smaller, and rounded beneath.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the point of the bill to the end of the tail, measuring over the crown	11	6	Length of the bill, measured along the ridge	0	9
„ of the tail	5	0	„ of the tarsus	0	10½
„ of the longest quill feather	6	6	„ of the middle toe	0	7
			„ of the middle claw	0	6

Three other specimens have precisely the same dimensions and markings on the plumage. Two of them were killed near the sources of the Peace River, in the Rocky Mountains.

* This is the general form. In one specimen the sinuation is rather abrupt, and deeper.

[27.] 10. Strix Acadica. (Latham, Gmelin.) *American Sparrow Owl.*

Genus. Strix. Linn. *Sub-genus.* Noctua. Cuvier.
Acadian Owl. Lath. *Syn.*, i., p. 149, sp. 38, pl. 5., f. 2.
Strix Acadica. Gmel. *Syst.*, i., p. 296, No. 43.
Strix Acadiensis. Lath. *Ind.*, i., p. 65, sp. 44.
Little Owl. (*Strix passerina.*) Wilson, iv., p. 66, pl. 34, f. 2.
Strix Acadica. Bonap. *Syn.*, p. 38, sp. 31.

Sp. Ch. S. (*Noctua*) Acadica, *magnitudine Turdi Canori, remigibus primoribus maculis albis ter quaterve fasciatis: secundariis extus immaculatis, caudâ interruptè bi-fasciatâ.*

Sp. Ch. American Sparrow Owl, the size of the Common Thrush, primaries crossed by three or four bands of white spots; outer webs of the secondaries unspotted; two interrupted bands on the tail.

There can be no doubt that this is the species so admirably described and figured by Wilson; and there are circumstances which appear to corroborate the correctness of the Prince of Musignano, in referring the *Strix passerina* of Wilson to the *Acadica* of Gmelin, or rather of Dr. Latham, its original describer. The size mentioned by both these writers is nearly the same. The two white bands on the tail are not, indeed, particularly mentioned by the latter, who merely designates them as "a few white spots;" but his figure, faulty as it is, represents these white spots as forming two bands. M. Temminck's description of the European Owl, erroneously considered the *Strix Acadica* of Gmelin, is only applicable to our bird in its size; the colours of the tail and of the flanks appear quite different. The only other northern species, liable to be mistaken for our bird, is the *Strix passerina* of Temminck, which he describes as being of the same size as *Strix Tengmalmi.* Now, as our *Strix Acadica* is much smaller, it cannot be the same with any of the three small Owls described in that author's *Manuel.* The Little Owl of Pennant is so slightly mentioned, that it is impossible to ascertain what particular bird the author had in view. It appears highly probable that he considered the two American species, with another found in Sweden, to be mere varieties, as he states the length to vary from eight to seven inches.—Sw.

This Owl was not noticed on the route of the Expedition, but specimens were sent from New Caledonia, by Mr. Archibald M'Donald. Wilson observes that it "is a general and constant inhabitant of the middle States, but is found most numerous in the neighbourhood of the seashore, and among woods and pine-swamps. It rarely comes abroad during the day, but, if driven from its retreat, flies

a short way, and again takes shelter from the light. At the approach of twilight it is all life and activity, being a noted and dexterous mouse-catcher. It builds its nest generally in pines, half way up the tree, and lays two eggs, which, like those of the rest of its genus, are white. The melancholy and gloomy umbrage of those solitary evergreens forms its favorite haunts, where it sits dozing and slumbering all day, lulled by the roar of the neighbouring ocean."

DESCRIPTION

Of a specimen killed on Thompson's River, New Caledonia, to the westward of the Rocky Mountains.

Colour.—*Bill* black. *Facial circle* of a soiled-white colour, mixed with black immediately round the orbit, and with yellowish-brown posteriorly. Ground colour of the plumage on the *dorsal aspect* liver-brown. The velvety feathers behind the facial circle differ from those of *Strix Tengmalmi* in not presenting a deeper tint of brown than the rest of the plumage, and in being much more generally speckled with white. The feathers of the head are also of a lighter brown than in that species, and have only a narrow white streak along the shaft, instead of round white spots. On the dorsal aspect of the neck most of the feathers have a large spot of white in their middles, as in *Strix Tengmalmi*. The back, tail coverts, and more interior scapularies, are unspotted; but there are some white blotches on the exterior scapularies. Above the primary coverts the wing has a narrow white margin; and there are four or five white spots on the outer margins of the secondary coverts, forming an oblique interrupted band. There are likewise three or four white spots on the outer margins of the primaries, and a white posterior border to the tertiaries; but the tips of all the quill feathers and the rest of the wing are brown. There are, indeed, three or four oval white marks on the inner webs of the quill feathers, but none of them show unless the feathers be separated. The *tail* is liver-brown, very narrowly tipped with soiled-white, and crossed by two narrow interrupted white bars, more than half an inch apart. There is a third less perfect bar, which is concealed by the tail coverts.

The *under surface* of the body is white, intermixed with chestnut-brown blotches, which occupy the middles of the feathers. The linings of the wings are white, tinged more or less with chestnut-brown; and the inner surfaces of the quill feathers and tail are broccoli-brown, with white spots corresponding to those of the exterior surfaces. *Thighs* and *feet* clothed with yellowish-brown feathers.

Form, &c.—*Head* large. *Bill* rather less curved than that of *Strix Tengmalmi*. Shape of the cere and nostrils the same as in that species. *Facial circle* complete. *Concha* more than an inch long, with a moderately broad operculum. *Wings* nearly as long as the tail, and of precisely the same form with those of *Strix Tengmalmi*. *Tail* short, nearly square, the outer feathers on each side being only a little shorter than the others, which are even. When the *legs* are stretched out, the claws reach the end of the tail. *Tarsi* rather longer than those of *Strix Tengmalmi*. *Toes* feathered to the nails, only one scale being visible. Inner nail rather longer than the middle one. The outer and the hind nail are smaller, and are rounded beneath.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail, measuring over the crown	10	0	Length of the bill	0	9
„ of the tail	3	0	„ of the tarsus	0	11
„ of the longest quill feather	5	4	„ of the middle toe	0	9
			„ of the middle claw	0	7

Another specimen, killed at the same place, was of precisely the same dimensions. The sexes of neither were noted.

Three Owls are mentioned by the Prince of Musignano as inhabitants of the United States, which did not come under notice in our journeys through the fur-countries, and perhaps do not extend so far north.

1. *Strix cunicularia,* which inhabits the burrows of the prairie-marmots, on the plains of the Missouri. The only part of the fur-countries in which this Owl is likely to occur, are the plains of the Saskatchewan, which resemble the prairies of the Missouri. Specimens in Mr. Taylor's possession, sent from Real del Monte, and examined by Mr. Swainson, prove this species to be an inhabitant of the Table Land of Mexico.

2. *Strix asio* is said to retire northwards from the United States in the summer.

3. *Strix flammea,* which, being common to both hemispheres, might be expected to be found in the more northern districts of both. We did not hear of it, however, in the fur-countries.

It is more than probable that several Owls, not known as inhabitants of America, may hereafter be detected in the fur-countries, as our means of procuring these unwonted birds of night were not ample. The *Wapacuthu Owl* of Pennant and Latham, mentioned in the note to page 86 of this work, seems to be a good species; but we are unable to assign it a place in the system without further details *.—R.

* The following is Mr. Hutchins's account of this species:—

"The Spotted Owl (*Wapacuthu*) weighs five pounds, and is two feet long and four broad; the irides bright-yellow; bill and talons shining-black and much curved, the former covered with bristly hairs projecting from the base; space between the eyes, the cheeks, and throat, white; on the top of the head and on each side of the concha the extreme parts of the feathers are dusky-black; concha dirty-white; scapularies, with the lesser and greater coverts of the wings, white, elegantly barred with reddish dusky spots pointing downwards; the quill feathers and tail are irregularly barred and spotted with pale-red and black; back and coverts of the tail white, with a few dusky spots; under coverts and vent feathers white; the breast and belly dirty-white, crossed with an infinite number of narrow reddish bars; the legs are feathered to the toes; the latter covered with hairs, like that of the bill, but not so strong. This bird is an inhabitant of the woods, makes a nest in the moss on dry ground, lays from five to ten white eggs in May, and the young fly in June, and are entirely white for some time after. They feed on mice and small birds, which they generally kill themselves."—Hutchins, MS., p. 99.

INSESSORES, OR *PERCHING BIRDS.*

THE inequality between natural groups, occupying a corresponding or analogous station in their own circles, is nowhere more apparent than on looking to the Insessorial birds,—the typical order of this great division of vertebrated animals. The Vertebrata will not bear the least comparison, in point of numbers, with the Annulosa; the proportion of the former to the latter being, in all probability, not more than 1 to 15; yet no one would think of denying to these divisions an equal value in the scale of creation, merely because their contents are so strikingly disproportionate. This inequality, moreover, is observable in another way. It may generally be remarked, on comparing the typical with the subtypical groups, that the contents of the latter are the most numerous. But sometimes this proportion is reversed, and the typical circle exhibits a greater diversity of forms than are to be met with in all the other groups put together.

The order of Insessores is of this description. It comprehends such a vast assemblage of species, arranging themselves under subordinate tribes, so distinct in themselves, that it becomes extremely difficult to select characters sufficiently comprehensive to define the order. This difficulty, indeed, is so great, that some naturalists have contented themselves with assigning negative rather than positive distinctions to this order. For if we rest on their inhabiting the land rather than the water, by what reason can we exclude the Gallinaceous tribes, and even many of the Grallatores, whose chief haunts are upon dry moors and commons? The Cinclus, again, is amphibious. If we characterize the Insessores as exclusively perching birds, the term, rigidly understood, is equally objectionable; for several families live entirely upon the ground; while others, among the wading and swimming orders, habitually repose upon trees. These, and a thousand similar difficulties, have ever embarrassed the speculations of those naturalists who seek for absolute and unexceptionable distinctions in nature; where, in truth, as they do not exist, so they have never been found. Without, therefore, dwelling further upon such exceptions to the prominent features which characterize the order before us, we may state that it is distinguished,—

First, by the feet being of that construction most adapted for perching or grasp-

ing; *the hallux or hind toe being always present, and articulated on the same plane with the fore toes.*

Secondly, by the absence of that strongly-defined tooth, which gives to the rapacious birds the exclusive power of tearing or dividing their food, previous to swallowing it.

Thirdly, by the presence, in the typical groups, of a small notch in one or both mandibles, enabling the bird to hold, but not divide, its food, which is swallowed almost universally in an entire state.

The two first distinctions are much more positive and universal than the last; but the whole will sufficiently detach the Perchers from all other birds.

The primary divisions of this order are so obvious, that the most inexperienced student cannot fail to perceive them. The Dentirostres, Conirostres, Scansores, Tenuirostres, and Fissirostres, are so many prominent groups, which have been long recognised in the celebrated *Prodromus* of Illiger, the *Règne Animal* of Cuvier, and sufficiently so in other works; they have been accordingly cited, with justice, to illustrate the circular nature of the Insessores. So far as regards the admission of these groups, nothing more need be said, since they have been universally adopted. This unanimity, however, among ornithologists merely extends to the typical forms; all agree, for instance, in classing the Woodpeckers and Parrots as climbing birds. But because the scansorial structure is exhibited under a different form in the *Grimpereaux* of M. Cuvier, we find these birds occupying a station in the *Règne Animal* with the Tenuirostres. Even this latter tribe, by some writers, is made to embrace every bird suspected of having a filamentous tongue, however strongly it may be allied, in all other parts of its organization, with groups far differently situated. When, therefore, it is said that the five sub-orders or tribes above named have been universally admitted, it must be at the same time remembered that no two writers have yet agreed on their definite nature. Hence it becomes advisable, before we proceed further, to attempt their true definition.

We have already stated an opinion, that the Insessorial order first resolves itself into three circular groups; by which disposition the Scansores, the Tenuirostres, and the Fissirostres, are united into one; and that the two others, namely, the Conirostres and the Dentirostres, constitute the typical and the subtypical circles. Their prominent distinctions may be thus stated :—

INSESSORES.

1. *Typical group.*	Bill more or less conic, strong, slightly emarginate; feet robust, formed both for perching and walking, or leaping: omnivorous.	Conirostres.
2. *Subtypical group.*	Bill not conic, of a weaker structure, but more deeply emarginate; feet more slender; the mouth armed with bristles.	Dentirostres.
3. *Aberrant group.*	Bill entire; feet generally imperfect, very short, and not adapted for walking.	Scansores. Tenuirostres. Fissirostres.

It may be further remarked, that the first and second groups are more perfectly constructed than the third; and that while the Conirostres are most conspicuous for their bulk, the Dentirostres, in proportion to their size, evince the greatest strength and courage. But distinctions, built only upon such considerations, are so vague as obviously to be of little value.

The decided analogy which Nature has preserved between the above groups of the Insessores, and those into which she first resolves the whole feathered creation, has recently been pointed out by Mr. Mac Leay with his usual acumen.

In an inquiry like the present it is, perhaps, of little importance at what point we begin our investigation. Yet, as it has been customary with the majority of ornithologists to commence with the Shrikes, immediately after treating on the rapacious birds, to which, indeed, they bear the strongest analogy, we shall follow the same plan, and commence, with M. Cuvier, by placing that family at the head of his

DENTIROSTRES.

The most prominent distinction of this tribe, as already intimated, is the strong emargination of one or of both mandibles. This notch is perfectly analogous to the tooth or festoon in the birds of prey; but, from its comparatively slight development, it merely enables the bird to take a firm grasp of its food, without the power (except in one family) of tearing or dividing it in pieces. The Raptorial birds exclusively employ their talons in seizing their quarry; with these weapons they transfix their victim, or strike it with such force as frequently to cause instant

death: the bill is reserved, as a knife, to separate the parts. But, among the Dentirostres, this process is partially reversed: the bill, and not the feet, is the instrument of capture; and that the struggles of its prey may not injure the face of the bird, this organ is either much lengthened, or the base is so defended from the possibility of mischief, by rigid feathers or stiff bristles directed forwards, that the face becomes secure from all injury. The cere, so general among the Raptores, is entirely wanting. The feet are less perfectly constructed than those of the Conirostres, as the middle and exterior toes are frequently connected; but in such birds the tarsi are sufficiently elevated to remove them from the Fissirostral order; although, from want of due attention to this circumstance, the genus *Todus* of Linnæus has been lately transferred from the Dentirostres to the latter tribe.

Agreeing, therefore, in these general characteristics, we find the groups of this tribe are naturally distributed in the three following circles:—

DENTIROSTRES.

1. *Typical group.*	Bill abruptly bent, strong, and deeply emarginate; claws much curved and very acute: carnivorous or insectivorous.	LANIADÆ.
2. *Subtypical group.*	Bill moderate, compressed, gradually bent; the notch less developed: insectivorous or frugivorous.	MERULIDÆ.
3. *Aberrant group.*	Bill weaker; the base generally broad; the feet either very slender, or short and feeble.	SYLVIADÆ. AMPELIDÆ. TODIDÆ.

The difficulty of framing characters for a group so diversified as the last, is sufficiently obvious to every naturalist acquainted with their economy; and it had been better, perhaps, to have assigned to each of the three, by which it is composed, a distinct character. But as this will be done in the sequel, we have considered it more expedient to preserve, even in this slight sketch of the tribe, an indication of those primary groups into which we shall hereafter show it is first resolved.

In entering more into the details of the above families, it will be my object to demonstrate, that the whole constitute a circular group. That the *Laniadæ* are so intimately connected with the *Merulidæ*, that the two families have been blended together by no less authorities than MM. Cuvier and Temminck; that the aberrant

forms of the *Merulidæ*, as *Timalia* and *Megalurus*, have been considered true *Sylviadæ*, either by MM. Temminck, Horsfield, or Vigors; that one of the principal genera among the *Sylviadæ* has been mistaken by the latter gentleman for a group belonging to the *Ampelidæ;* and, finally, that the *Todidæ* are so closely united with the Tyrant Shrikes, by means of such genera as *Fluvicola* and *Nengetus*, that not only Linnæus, but every subsequent writer of his school, has placed the latter with the genus *Lanius*.

These families, uniting at their extremities, present, in their typical structure and organization, the following indisputable analogies to the five leading tribes of Insessorial birds :—

Tribes.	*Analogies.*	Families.
Dentirostres.	Bill furnished with a strong tooth; claws, slender, strong, very acute: carnivorous or insectivorous.	*Laniadæ.*
Conirostres.	Bill more lengthened, arched from the base; feet robust, adapted either for walking, perching, or climbing: omnivorous.	*Merulidæ.*
Scansores.	Notch of the bill either wanting or very slightly developed. Climb among trees to seek their food. Insectivorous.	*Sylviadæ.*
Tenuirostres.	Feet very short. Nectarivorous or frugivorous.	*Ampelidæ.*
Fissirostres.	Rictus wide or bristled; feed upon the wing; feet very weak. Insectivorous.	*Todidæ.*

It may be further remarked, that the most perfectly organized birds are among the Merulidæ and the Conirostres; that the faculty of climbing and searching the most intricate ramifications of trees for their food is confined, among the Dentirostres, to the Sylviadæ, where there is a general tendency to the scansorial structure, even in the most typical groups; so close, indeed, is the analogy between these birds and the slender-billed creepers, that this relation has been mistaken by all naturalists for one of absolute affinity. The parallel between the two next groups at first sight is less apparent, but it is no less curious and beautiful: both derive their sustenance almost entirely from the vegetable kingdom; but the Tenuirostres feed chiefly from *flowers*, while the Ampelidæ are supported by *fruits*. Lastly, the Todidæ agree with the Fissirostres in the feeble organization of their feet; the breadth and depression of their bill; and, more

especially, in that particular habit of seizing their food, which consists alone of insects, during flight.

The above results will, however, be rendered more intelligible by a closer analysis of the families themselves; for which purpose we shall commence with the

LANIADÆ,

as being the typical group first on the list of M. Cuvier's Dentirostres. We commenced a partial investigation of this family several years ago, and dwelt, at some length, upon those forms which appeared to enter within three of the principal groups ; namely, the *Lanianæ*, the *Thamnophilinæ*, and the *Edolianæ*. Ignorant of the views which another gentleman had taken of these birds, and whose paper had been previously read before the Linnean Society, we were somewhat surprised at being told that our observations, if founded in nature, were calculated to overthrow the whole series of affinities therein stated; while, if incorrect, we should be exposing the fallacy of that system we had adopted. By the subsequent appearance of the paper in question, we immediately perceived our own views were not in unison with those of the writer. Yet, as we had conducted our investigation by analysis, so we could not be fully persuaded that the results were false, without giving to the subject a much closer investigation than it had yet received. In such researches, merely to oppose synthesis to synthesis would have been very little to the purpose; because, by such a principle of combination, the most remote families may be made to appear conterminous, and we might have, as an anonymous writer somewhat ludicrously contends for, "*as many natural methods as there are organs.*" With the hope, therefore, of discovering the true series among the Laniadæ, we were compelled to have recourse again to analysis, and to extend this mode of investigation to every group of the entire order of Insessores. If, then, after five years devoted to this research, we finally retain our first impressions, we feel that neither time nor mature consideration have been spared to arrive at truth: the only object we have been desirous of attaining. That perfection of knowledge which time alone unfolds, will probably dispel many doubts and difficulties which are not yet solved or surmounted; or may, possibly, place the very facts upon which our present views are founded, in a new and unexpected light. But, until that period arrives, we feel persuaded that nothing *yet known* militates, in an essential degree, against the general opinions on natural arrangement that we have adopted. In the progress of this work, we shall endeavour to demonstrate the correctness of these views by a series of facts, as new as they are extraordinary, and by submitting them to tests which have never yet been so rigorously applied to any system.

The great point, therefore, which is at issue, and upon which the natural arrangement of the entire order of Insessores absolutely depends, is this: Are the Edolianæ or the Thamnophilinæ one of the *typical* groups in the family of Laniadæ?

It has been perfectly demonstrated by Mr. Mac Leay (and we might give numerous examples from the animal kingdom in corroboration of the fact), that the two typical groups of every circle bear a close and intimate analogy, no less than a direct affinity, to each other; and that, when such groups are perfect, that is, when the five leading forms in each have been detected, this relation of analogy will be fully apparent between each. This, in truth, is perhaps the best, as it certainly is one of the most severe tests, by which any supposed series of natural relations can be tried. For although the naturalist, by the synthetic method, is perpetually in danger of confounding analogy with affinity; of taking that to be a form of transition, which subsequently proves to be one of *representation;* yet the strongest prejudice in favour of any preconceived notion can never so far blind his judgment as to produce a *double* series of groups, having direct analogies one to the other, and at the same time a positive affinity. Had the labours of the profound observer who first detected this property of natural groups achieved nothing more than this discovery, he would have deserved the lasting gratitude of all succeeding naturalists.

Now if the five types of form among the Lanianæ and the Edolianæ, or between the Lanianæ and the Thamnophilinæ, had been detected, the question might at once be set at rest; but, unfortunately, this is not the case; and we must therefore inquire what characters of structure, or what peculiarities of habit, are shared in common between a Lanius, a Thamnophilus, and an Edolius. The respective peculiarities of each we shall now draw up in opposite columns, for the sake of greater perspicuity.

Lanius, *Linn.*	Thamnophilus, *Vieil.*	Edolius, *Cuv.*
	EXTERNAL ORGANIZATION.	
Bill hard, universally short, entirely compressed, the culmen arched from the base; the upper mandible furnished with a distinct and prominent tooth; the lower mandible thick and ascending.	*Bill* hard, more lengthened, but entirely compressed, the culmen curved only at the end; the upper mandible furnished with a distinct and sometimes prominent tooth, but smaller than that of *Lanius;* lower mandible thick and ascending.	*Bill* not strong, generally short, but sometimes lengthened, compressed only on its side, the base broad, culmen arched from the base; upper mandible notched, but destitute of any tooth; lower mandible weak, straight, not ascending.

Lanius, *Linn.*	Thamnophilus, *Vieil.*	Edolius, *Cuv.*
	EXTERNAL ORGANIZATION.	
Feet strong; the *tarsi* considerably longer than the hind toe.	*Feet* strong; the *tarsi* considerably longer than the hind toe; the two outer toes frequently connected at their base.	*Feet* slender, short; the *tarsi* scarcely longer than the hind toe.
Wings rounded, of moderate length.	*Wings* rounded, shorter and more feeble than those of *Lanius*.	*Wings* lengthened, but the three first quills graduated.
	HABITS.	
Food. Carnivorous and insectivorous.	*Food.* Carnivorous and insectivorous.	*Food.* Insectivorous.
Solitary, or living only in pairs.	Solitary, or living only in pairs.	Social, congregating in large flocks.
Watch for their prey from a fixed station.	Search for their prey in foliage.	Search for their food during flight.
Seize their food with their claws *, and devour it at leisure when at rest.	Seize their prey (in all probability) with their bill.	Seize their food with their bill.
Prey upon small birds, insects, and less organized animals.	Prowl in thickets after the eggs and young of other birds, and attack such as are weak or sickly, as well as insects and less organized animals.	Prey entirely upon bees and small winged insects.

Now if Lanius be a typical group, we can be at no loss to discover which of these is most related to it by affinity; more particularly as in the two other divisions, namely, the Ceblepyrinæ and the Tyranninæ, the feet are equally short with those of the Edolianæ. But although, from our present imperfect knowledge of these birds, we are still ignorant of the five leading forms, or rather genera, in each of the sub-families of Lanianæ, Thamnophilinæ, and Edolianæ, still we may compare the contents of the whole family with that of the Merulidæ. For as both are unquestionably the typical groups of the Dentirostres, their sub-families,

* This we have, in one instance, personally witnessed; and the fact is also confirmed by the observations of our friend Mr. Audubon.

if arranged in their true series of affinity, should intimately correspond in their parallel relations of analogy; and such appears to be actually the case in nature, as will be subsequently shown. In the meantime, the following table will sufficiently exhibit the typical characters of the leading divisions of the

LANIADÆ.

Sub-families.		Typical Genera.
	1. *Typical group.*	
LANIANÆ.	Bill short; a projecting tooth in the upper mandible; claws acute.	*Lanius*, Linn.
	2. *Subtypical group.*	
THAMNOPHILINÆ.	Bill lengthened; the tooth less prominent; tarsi moderately long; claws more obtuse.	*Thamnophilus*, Vieil.
	3. *Aberrant group.*	
EDOLIANÆ.	Bill moderate; tooth obsolete; tarsi short.	*Ocypterus*, Cuv.?
CEBLEPYRINÆ.		*Ceblepyrus*, Cuv.
TYRANNINÆ.		*Tyrannus*, Bris.

Every one, who has given the least attention to natural affinities, must be fully aware how intimately the above genera are connected among themselves; and that even Linnæus long ago arranged the greatest proportion of the species then known under his genus *Lanius*. It will subsequently appear that there is good reason to believe the whole form a circular group; but on this point positive evidence is still wanting. Certain it is, that every ornithologist has assimilated the American Tyrants to the true Shrikes; and we know, from personal observation, that this affinity is carried still closer, by several species of the former possessing the carnivorous habits of the latter, by feeding upon reptiles, and even fish. Still there is no group or species yet discovered which partakes so much of both as to induce us to exclaim, "The circle is closed!" The *hiatus* is still, in our opinion, sufficiently great to admit of at least two intermediate forms. Whether these exist in the unknown regions of South America, Africa, or Madagascar, where nature has been lavish of these birds, must be a matter of conjecture; but we feel it is for the true interests of science that its votaries should dwell upon all such difficulties, although, in the present case, it may militate against the above disposition of the groups.

The genera and sub-genera among the

LANIANÆ

are few, although the typical group, to which belong the birds hereafter described, contains many species of great uniformity in structure and economy: their habits are too well known to require elucidation. The *Falcunculus frontalis**, a bird of New Holland, evidently departs from the type both in organization and habits. This species, according to Lewin, "frequents *thick* bushes, and is very active in *tearing off the bark* of trees and shrubs in search of insects, particularly hard-coated beetles†;" an economy which is accompanied by a corresponding peculiarity in the structure of the feet. Tropical America produces another modification of form in the genus (?) *Cyclaris*, where the bill, although rather more lengthened, assimilates to that of *Falcunculus;* but the wings, feet, and tail assume the weakness of construction so conspicuous in the next sub-family; of its economy we are in total ignorance, but its whole structure is evidently against the idea of its possessing the bold and daring habits of the typical Shrikes. In Southern Africa there is another form, still farther removed from the typical Shrikes, and which we have distinguished by the name of *Nilaus:* it is the *Lanius capensis* of Linnean writers, and evidently unites the characters both of this sub-family and the next: the bill, as in the preceding forms, is arched from the base, and its tooth is well developed; but, instead of being short and thick, it is slender and much lengthened; while the tail is short, weak, and perfectly even; the back and rump feathers are thick and soft; but the feet and claws are those of *Lanius*. Among the rich zoological collections made by our friend Mr. Burchell, is a form belonging to this division, which has not yet been made known. We must notice another, too remarkable to be confounded with either of the preceding: the *Lanius leucogrammicus* of Professor Reinwardt‡. The general conformation of this bird

* We have very little doubt, when this family is better known, that this group will be found to represent the *Scansores* in its own circle. Naturalists have passed over in silence the remarkable structure of the feet: the hind toe, as in all scansorial birds, is so much lengthened as to be fully equal to the middle toe.

† Lewin's *Birds of New South Wales*, pl. 26.

‡ We shall give to this, and to all other groups or forms considered of sufficient importance to be kept in view, a character and a name, to be employed hereafter as a generic, sub-generic, or sectional distinction, according to the value they may respectively assume when the natural arrangement of the group to which they may belong has been made out by analysis. In calling the attention of ornithologists to these minor variations in structure, we formerly thought it sufficient to designate the group merely by citing the name of the principal species, or by detailing its prominent characteristics, without laying ourselves open to the imputation of framing more new names than were absolutely essential. But our delicacy in this instance has been superfluous: not only have these groups been since elevated to the rank of genera, but no notice has been taken of our previous observations on them. As instances of this, we

unquestionably associates it with *Lanius*, although the tarsi are somewhat shorter, and the claws not of that fine and acute make, which would lead us to believe they were used to secure the prey of the bird. The tail is long, considerably graduated, and narrow; in all which it assimilates to *Lanius corvinus*. But the bill is the great characteristic of this bird: it preserves, indeed, something of the general form of Lanius, being short; but it is withal so slender, that it can only be compared to the outer half of the bill of a stout Thrush. Now, if any Shrike can be supposed to represent the Tenuirostres in its own circle, we should certainly suspect this to be the form under which such an analogy would appear. However this may be, it is not only far removed from the typical species, but exhibits no medium of communication between Lanius and Thamnophilus.

These are all the modifications of form, sufficiently important to be noticed, which we have yet detected in this group; from which it appears that their circular succession remains for future discovery. Much information is also to be supplied before any decisive opinion can be formed on the value of these distinctions; and still more impossible is it to separate, at present, the genera from the sub-genera.

may cite the recently-named genus *Monarcha*, the characters of which were published in 1822 (*Zoological Illustrations*, O.S., pl. 147.); the genus named *Collurisoma*, first pointed out by us in 1825; and the genus, since called *Tropidorhynchus*, which we had previously named in the *Zool. Journal*, and, but for these anticipations, should have characterized in the same work. See *Zool. Journal*, i. 480.

LANIUS BOREALIS.

London Printed for John Murray Successor to the Admiralty January 1st 1828

[28.] 1. LANIUS BOREALIS. (Vieillot.) *Greater Northern Shrike.*

FAMILY. Laniadæ. *Sub-family.* Lanianæ. SWAINSON.
Lanius excubitor. FORSTER. *Phil. Trans.*, lxii., p. 386, No. 9.
Lanius borealis. VIEILLOT. *Ois. de l'Am.*, i., p. 80, pl. 50. Female.
Great American Shrike. (*Lanius excubitor.*) WILSON, i., p. 75, pl. 5, f. i. Male.
SABINE. *Frankl. Journ.*, p. 674.
No. 39, HUDSON'S BAY MUSEUM. Male.
Wawpow-whiskæ janneesh, or Meesheh wappisk kæchawn. CREE INDIANS.

PLATE XXXIII. FEMALE.

This is by no means an uncommon bird in the woody districts of the fur-countries, up to the sixtieth parallel of latitude, if not still farther north. It is most frequent on the banks of the Saskatchewan, where it is usually seen on the borders of the plains, or in the vicinity of a small lake, perched on the summit of a tree. Its general resemblance to the *Corvus Canadensis* has obtained for it its Indian appellation of "White-whiskey john;" but, unlike that bird, it chooses the loftiest look-out it can find, instead of hopping about among the lower branches of a tree. It is very wary, flying off when one approaches nearly within gunshot, but settling again on an equally exposed perch after a short flight. In this way it may be pursued two or three times round any small piece of water, until, instead of growing more shy, it becomes less so, and allows the fowler to come too near for its safety. Its voice is a loud and rather harsh scream. It feeds on insects and small birds, which it retains with its foot while it plucks them in pieces with its bill. Birds of this genus have the habit of spitting insects on a thorn, as a butcher would skewer a piece of meat, whence their appellation of "Butcher-birds;" but no instance of this fell under my notice. Individuals killed at Carlton House early in May had their crops filled with the fragments of grass-hoppers. It remains all the winter in the fur-countries, but is much more frequently seen in summer. Its nest is built in the fork of a tree, of dry grass and lichens, neatly intertwined and lined with feathers. The eggs, five or six in number, are of a pale bluish-grey, spotted at the large end irregularly with dark yellowish-brown. Like the other species of this genus and of *Tyrannus*, this Shrike attacks the Eagles, Crows, and other large birds, when they approach its haunts, and, by its fierceness and perseverance, drives them away.—R.

We believe the species, of which the female is figured, to be that described by Wilson under the name of *Lanius excubitor;* the more so, as his account of the female perfectly agrees with our bird. It had long been imagined that this was identical with the European species; but it appears, from a passage in the *Nouveau Dict. d'Hist. Nat.*, that this belief has been abandoned. Nevertheless, it is desirable first to state the distinctions between two male specimens of *L. borealis* and one of *L. excubitor*, killed during the last year in Hertfordshire, near Tittenhanger Green. In the general disposition and in the tint of their colours, no difference worthy of remark is apparent. In the British specimen, the white upon the upper tail coverts and scapulars is much more obscure; but the colours of the wings and tail are precisely alike. The true distinction seems to be, that *borealis* is obviously a larger bird, not in regard to its total length or to its size after preservation (for both these depend in a very great degree upon the mode of preparing the skins), but in the relative length of the bill: that of *borealis* measures, from the angle of the mouth to the extreme tip, $1\frac{5}{10}$ inch; that of *excubitor* $1\frac{1}{10}$ inch. In *borealis*, the second quill is clearly shorter than the sixth; the third is slightly shorter than the fourth, and obviously longer than the fifth,—the fourth thus becoming the longest. This disposition is observed in both sexes *. Now, in *excubitor*, the proportions are different: in two specimens now before us, the third and fourth are of equal length and are the longest, while the second is precisely as long as the sixth †. We may, therefore, consider that the specific distinctions of the two are satisfactorily established.

Let us now inquire whether the *Lanius septentrionalis* of Gmelin, as some writers have supposed, be intended for our American *borealis*. Gmelin confessedly copies his account from Latham, applying the above name to the "Northern Shrike" of the *Synopsis*. This bird is stated to have "the bill not much bent; the plumage brown above; belly and vent inclining to *brown;* the four middle feathers plain *brown;* the webs of the rest white at the tip; legs short." Scarcely one of these characters can be applied to either sex of our species; while the length of the tail, which is stated to be "two inches," is not only inapplicable to this, but to every other Shrike yet discovered in North America. The same account is repeated nearly *verbatim* in the *General History of Birds*, ii., p. 95. The description of the Northern Shrike, given by Vieillot, is manifestly a mere translation from Latham. Pennant has obviously confounded the European and the American

* We adopt, of course, the usual mode of considering the spurious quill as the first.

† We cannot reconcile these measurements and proportions with those given by Prince C. Bonaparte as distinctive of the two species.—*Syn.*, p. 72.

species in his description of the "Great Shrike," in *Arctic Zoology;* his account, therefore, cannot be cited with confidence, either for one species or the other.

We must now compare our specimens with the *Lanius borealis* of M. Vieillot, whose description is so applicable to the *female* of our bird, and to the *female* of Wilson's *excubitor*, that we feel no doubt of the identity of all three. But it may well be inquired, why this author, who appears to have been in America, and to have seen the *borealis* in its native regions, should have omitted all mention of the male bird?—presuming that Wilson is correct in describing the male as differing so much in colour from the female. Now the only solution we can give to this question is, by referring the reader to our remarks upon *Lanius ardosiaceus*, and in being compelled to add, that this writer's statements, upon similar matters of fact, have been frequently called in question, or positively denied, by the American ornithologists.

From the foregoing statements we feel justified in concluding—First, that the accounts of the Northern Shrike of Latham (*Syn.*, i., p. 165, *Gen. Hist.*, ii., p. 95), and of Gmelin, Shaw, and Vieillot, are undeserving citation, as being totally inapplicable to any known American bird, and as having, in all probability, originated in a description, hasty and imperfect in itself, or drawn up from a young or mutilated Shrike of an unknown species.—Secondly, that the male of *borealis* has been mistaken by Pennant and Latham for the European *excubitor;* and that the female appears to have been unknown to either.—Thirdly, that the female of *borealis*, although stated by M. Vieillot to be exactly like the male, is in reality very different; this writer, as we shall subsequently show, having confounded the true male with his *L. ardosiaceus*.—Sw.

DESCRIPTION

Of a *female*, killed at Carlton House, June, 1827.

Colour of the upper aspect of the head, neck, back, scapularies, and part of the lesser wing coverts, intermediate between yellowish-brown and yellowish-grey*. Tail coverts whitish, with a slight tinge of ash-grey, and some very obscure cross lines. The secondary coverts and the adjoining row of lesser coverts are pitch-black, the latter being narrowly edged with the general colour of the back. The primary coverts, primaries, and secondaries, are dark liver-brown. The third primary and following ones to the tenth inclusive have a white space next the quills, which is slightly mottled with brown, and is mostly concealed by the coverts. The second primary is slightly bordered with greyish-white at the same place, and the seventh and following primaries, and all the secondaries, are narrowly edged at their tips with soiled white. The tail is pitch-black, with a white border; its two central feathers are entirely

* *i. e.*, Yellowish-brown, with much bluish-grey shining through it.

black, the adjoining ones are very slightly tipped with white; the others have wider white tips in proportion as they are more exterior, and the outer one on each side has only a part of its inner web next the quill black. The bristles at the angle of the mouth and round the nostrils are blackish-brown, and the lores are a little dusky; but there is a narrow whitish frontlet. A dull umber-brown band commences at the nostrils, and, passing backwards so as to include the eye, terminates on the side of the neck.

Under surface.—The cheeks, throat, breast, and belly, are ash-grey, crossed by semicircular lines of clove-brown, generally two on each feather. The vent feathers and under tail coverts are soiled white, a few of the longer of the latter being obscurely barred on their ends. Both *mandibles* are pale horn-colour at the base, gradually becoming bluish-black towards the tips. *Legs* pitch-black.

Form, &c.—*Bill* much compressed, with a strong and abrupt tooth near its hooked point. There are six strong bristles at the corner of the mouth, and the oval, longitudinal *nostrils* are concealed by short bristly hairs. The *wings* are moderately long, reaching within an inch and three-quarters of the end of the tail. The fourth primary is the longest; the third is half a line shorter; the fifth is a line shorter than the fourth; the sixth is about five lines shorter than the fifth; the second is two lines shorter than the sixth *, or half an inch shorter than the third; while the first is shorter even than the secondaries, and is an inch and a quarter shorter than the second primary. The *tail* is cuneiform, the exterior feathers being nine lines shorter than the middle ones. Hind toe robust and a little longer than the lateral ones. *Claws* much compressed.

Dimensions

Of the *female*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	11	0	Length of the bill, from the angle of the mouth	1	1
,, of the tail	5	0	,, of the tarsus	1	1
,, of the longest quill feather	4	6	,, of the middle toe	0	8
,, of the bill measured along its ridge	0	9	,, of its claw	0	3½

A specimen, to every appearance a *male*, killed at Penetanguishene, on Lake Huron, corresponds with Wilson's figure above quoted, except that the frontlet is whitish in our bird, instead of black as in the figure. It differs from the female described above in the general colour of the dorsal aspect, which is pearl-grey, with a slight tinge of yellowish-grey, approaching very nearly to the colour of the European *L. excubitor* and to the subject of the following article. The frontlet is whitish, and the lateral mark on the head is pitch-black, and extends farther back than in the female. The wing and tail feathers are of a deeper black, and the white speculum and tips of the secondaries are more conspicuous than in the

* In the specimen preserved in the Hudson's Bay Museum, the second quill feather is two lines longer than the sixth, but has the same relative length with regard to the other feathers.

LANIUS EXCUBITOROIDES.

female. The lower parts are of a lighter grey, and the bars which cross the breast and belly finer and much paler, becoming nearly obsolete towards the vent. The bill is darker. The specimen is injured, so that its length cannot be exactly ascertained, but it appears to be shorter than the female. The tail is certainly a quarter of an inch shorter; but the dimensions of the bill and tarsi correspond with that specimen. It differs from the bird described in the following article in its greater size, less cuneiform tail, white frontlet, paler bill, and barred breast; but the general resemblance between the two is very great.—R.

[29.] 2. LANIUS EXCUBITORIDES. (Swainson.) *American Grey Shrike.*

FAMILY. Laniadæ. *Sub-family.* Lanianæ. SWAINSON.

CH. SP. LANIUS EXCUBITORIDES *pulchrè plumbeus subter albus immaculatus, rostro lineâque frontali transversâ et fasciâ capitis laterali nigris, alis brevibus, caudâ gracili elongato-cuneatâ nigrâ albo lateraliter cinctâ.*

SP. CH. AMERICAN GREY SHRIKE, deep pearl-grey; beneath white, without markings; bill, the narrow frontal line, and a band passing over the eye and cheek, black; wings short; tail narrow, very cuneiform, black, with a white lateral border.

PLATE XXXIV.

This is a more southern bird than the preceding species. It does not advance farther north in the summer than the fifty-fourth degree of latitude; and it attains that parallel only in the meridian of the warm and sandy plains of the Saskatchewan, which enjoy an earlier spring and longer summer than the densely wooded country lying betwixt them and Hudson's Bay. Its manners, as observed in the neighbourhood of Carlton House, were precisely similar to those of the preceding species, feeding chiefly on the grasshoppers, which are exceedingly numerous in the plains. Mr. Drummond found its nest, in the beginning of June, in a bush of willows; it was built of twigs of *artemisiæ* and dried grass, and lined with feathers. Its eggs, six in number, resembled those of the Magpie, being of a very pale yellowish-grey colour, with many irregular and confluent spots of oil-green, interspersed with a few of smoke-grey.—R.

The examination of this bird has been attended with no ordinary trouble. That a species, by no means rare in the northern parts of America, should now for the first time be considered new, may well excite both surprise and scepticism. But as our opinion is founded upon the statements of others, whose accuracy in the

narration of facts has never yet been questioned, we shall lay before the reader the arguments which have influenced our opinion in this matter.

In the first place, it will be necessary to institute a rigorous comparison of our bird with the only two American species described by modern ornithologists, and with which it may appear to agree: these are the *Lanius Carolinensis* of Wilson and the *L. ardosiaceus* of Vieillot. The first of these is the *L. Ludovicianus* of Prince Charles Bonaparte. This bird, we are expressly told by Wilson, is *much darker* on the upper parts than the Great American Shrike (*L. borealis*, Nob.), and is decidedly smaller; secondly, that it inhabits the *warmer parts* only of the United States, as the rice plantations of Carolina and Georgia. It is further obvious, that Wilson met with this species only while travelling through these southern provinces. He professes his ignorance of its nest and of its eggs: the former he describes partially from hearsay; and the latter he "he had no opportunity of seeing." It is, therefore, clear, that his Loggerhead Shrike must be unknown in all those northern States, towards Philadelphia, which he had so thoroughly explored, and where he principally resided. The additional information given by Prince C. Bonaparte upon Wilson's *Carolinensis*, although short, is quite to the same purpose. He calls the plumage *dark slate*, while that of the *borealis* is termed *light slate;* and the *habitat* is restricted to the "southern States." Both these writers, moreover, agree respecting the colours of the *four* middle tail feathers, which are totally black; whereas they state that the *borealis* has only the two middle tail feathers black, the two next being (as in our bird) tipped with white. Upon looking over the inimitable drawings of our friend M. Audubon, we were particularly struck with the very dark colour of his figures of the Loggerhead Shrike (more resembling that of the African *L. collaris* than of the European *excubitor*), as being very different from a bird which we had long possessed under this name; and upon our mentioning the circumstance, we were assured that the figures were exact representations of the bird, as killed and drawn by our friend in Louisiana. On the presumption that these testimonies can be relied upon as strictly correct, we consider that our species is distinct from the *Carolinensis* of Wilson and Audubon and from the *Ludovicianus* of Bonaparte.

We now turn to the *L. ardosiaceus* of Vieillot. If this writer had described the *male* of *borealis*, or if he had not clearly expressed his belief that it was like the female, we should at once have concluded that his *ardosiaceus* was the same bird as Wilson's *Carolinensis;* but he has himself furnished us with proofs against this idea. In the very commencement of his description he convinces us that he

is about to describe the male of his own *borealis* *. These are his words: "Cet oiseau *a plus de rapports avec la Pie-grieche grise* (*L. excubitor*) que la précédente (*L. borealis*, fem.); il n'en diffère que par une couleur plus foncée, et par son bec *plus robuste.*" Regarding the *couleur plus foncée*, the writer evidently had not our bird in view, but Wilson's *Carolinensis*, many particulars of which he subsequently blends into this very description; while the only known American Shrike, which has the bill stouter than the European *excubitor*, is beyond all doubt the true male of his own *borealis*. In further proof that M. Vieillot has confounded both these species (*borealis*, Nob., and *Carolinensis*, Wilson) under the name of *ardosiaceus*, it must be remarked that he states no limits to the range of this imaginary species. He says it is sometimes found *with his borealis* (which, in reference to the *male borealis*, is very natural), and that it extends to the southern provinces of Carolina, Florida, and Louisiana; thereby confounding Wilson's with the northern bird. Upon these grounds do we consider the *ardosiaceus* as an imaginary species, and to which, consequently, we cannot assimilate our present bird.

But may not this be the *excubitor* of Wilson; as it agrees with the light colour of the plumage and the two entirely black tail feathers mentioned by that writer? True: but the size is much smaller; and the bill, instead of being light blue, is very deep glossy black. We have, moreover, already stated our reasons for considering Wilson's *excubitor* to be the true male of Vieillot's *borealis*. Lastly, as this bird so closely resembles the European *excubitor* in size and colour, what are their respective distinctions? These we shall now state:—

LANIUS EXCUBITORIDES, IN TWO SPECIMENS.	LANIUS EXCUBITOR, IN TWO SPECIMENS.
Size of the different members somewhat smaller. Bill, from the base to the tip of both mandibles, very dark bluish-black.	Bill bluish-black (horn colour in the dead bird) only on the outer half; the base of both mandibles, but particularly of the under one, pale flesh-colour (yellowish white in the dead bird).
Frontal feathers covering the nostrils, crossed by a narrow band of deep-black.	Frontal feathers cinereous.
Black stripe on the side of the head, encircling the upper margin of the eyelid.	Upper margin of the eyelid nearly white.

* The figures in this work are too inaccurate to claim authority on questions of nice discrimination. Our copy, moreover, is uncoloured.—Sw.

LANIUS EXCUBITORIDES.	LANIUS EXCUBITOR.
Exterior lateral scales of the tarsus divided into several pieces, exclusive of those towards the base of the claws.	Exterior lateral scales of the tarsus entire, exclusive of those at the base.
Extreme length of the wing, when closed, $3\frac{8}{10}$ inches.	Extreme length of the wing, when closed, nearly $4\frac{0}{10}$ inches.
Proportionate length of the primaries the same in both.	
Tail considerably graduated, the outer feather being $1\frac{1}{10}$ shorter than the middle ones.	Tail less graduated, the outer feather being, in one specimen, only $\frac{6}{10}$, and, in the other, $\frac{8}{10}$ shorter than the middle ones.

Upon these data we ground our opinion that this is not the *excubitor* of Europe.

It therefore now only remains to be considered whether, in this intricate inquiry, we can derive any assistance from the writings of the last age. On this task we shall enter, not only from a wish of satisfying ourselves on this subject, but to exemplify, by one striking instance, the impossibility of adopting names or relying upon descriptions, published at a time when ornithology was in its infancy. The following details will further show that, so far from facilitating the researches of the moderns by reviving these dubious names and vague records, with the laudable intention of establishing the priority of nomenclature, we shall involve the whole in inextricable confusion; and, worse than this, we shall do signal injustice to those faithful and accurate ornithologists who, like Wilson, Bonaparte, and Say, have stamped their descriptions by a name, the right understanding of which is intelligible to every one who peruses their works. Such names, indeed, may be compared to good and lawful coin of the realm of science, which will bear analyzing; while those of former compilers, when thoroughly assayed, are not unfrequently found alloyed by heterogeneous mixtures, which almost defy the power of the alchemist to part.

The first systematic writer, in whose works we find the name of *Lanius Ludovicianus*, is Brisson, a naturalist whom no one of ancient or modern times has excelled in exact and faithful description: unfortunately, in this instance, there is nothing positive to assist our research, further than that his specimen came from Louisiana. We are, however, indirectly informed that its plumage is decidedly darker than that of *excubitor;* for the latter is described (vol. ii., p. 143) as "*d'un fort joli cendré clair,*" but the former as merely "*cendré.*" He further observes,

that the two middle tail feathers only are black; but we place no great reliance on this character either way, subject, as it frequently is, to the mere effects of age. So far, therefore, as the original description of *Ludovicianus* is concerned, we find no admixture or inconsistency; it is made by an original writer, who describes only what he sees. We shall now show that upon this account, faultless as it is, all the subsequent errors have been engrafted. On the authority of Brisson, the *L. Ludovicianus* was included in the *Systema Naturæ* (Ed. xiii., Vimb. 1767); but, in the specific character, the tail is here first stated to be cinereous (p. 134), instead of partially black. In the *Syn. of Birds* (i., p. 162), we find Brisson's account accurately abridged; but, unfortunately, a reference is given to the *Pl. Enl.* 397, which represents a *Thamnophilus*, instead of a true Shrike. The error in the *Systema Naturæ*, and the false synonyme in the *General Synopsis*, are next adopted by Gmelin; and although we find the latter mistake rectified in the *Index Ornithologicus*, its author brings in a *third* species, the Black-crowned Shrike of Pennant, and frames his description so as to make it apply to both,—the "*pileus niger*" belonging to Pennant's bird; for Brisson distinctly states that, in his *Ludovicianus*, "*les parties supérieures de la tête, du col, le dos, &c., sont cendrées.*" All these errors are transferred into the *General History of Birds*, with an opinion expressed, that the *L. Ludovicianus*, as there characterized, may be a variety of the same author's *L. nengeta* (under which he comprises the *ardosiaceus* of Vieillot) or of the *excubitor*.

Before proceeding further, let us remember that we first began to lose sight of the true *L. Ludovicianus* by an unlucky error in the *Systema Naturæ;* that it became more obscure in Gmelin's compilation; and that it was finally lost in the *Index Ornithologicus*, the *Ludovicianus* of which work and of the *General History* is an imaginary bird. It shall now be shown that the *L. nengeta* of the same work, to which its author thinks his *Ludovicianus* may be referred, as "varieties of each other," is itself an imaginary species!—composed of three real birds of different Linnæan genera, and also of a fourth, which we have already shown to be fictitious, namely, the *ardosiaceus* of Vieillot. Referring, therefore, to the synonymes at p. 80 of the work last mentioned, we need only observe that the Grey Pye of Brazil (Edw., pl. 318) is a modern *Nengetus* and a Linnæan *Fly-catcher;* that the *Cotinga cinerea* of Brisson, as Le Vaillant remarked twenty years ago, is the young of *Ampelis pompadoura*, L.; and that the Grey Shrike of Pennant is either the *L. excubitor* or *borealis*, loosely assimilated by Pennant with the bird of Edwards.

We have now traced the scientific history of Brisson's original *Ludovicianus*, through all its complex ramifications. The whole detail is a good example of the drudgery to which modern naturalists must be condemned, if they are compelled by the laws of nomenclature to pay that scrupulous attention to the names and works of authors, whose writings, useful and even valuable in their day, are now become almost unintelligible to modern science. If this principle is to be followed, the present race of naturalists will find full employment as commentators only upon the works of their predecessors; books and synonymes, rather than nature, must be their sole study; for the time that is consumed in unravelling one set of such errors will frequently be sufficient for describing ten new objects. We most fully coincide in the propriety, and even the common justice, of distinguishing every object in nature by the specific name imposed upon it by its first describer, provided it is not glaringly defective or otherwise erroneous; but we must protest against reviving all those, the meanings of which are either imperfectly stated or are now unintelligible. By citing such accounts as authorities, when in point of fact they are none, we perpetuate error, and transmit to posterity the same entanglement of synonymes which we ourselves may have vainly tried to unravel. These sentiments, from particular circumstances, we feel obliged to express somewhat strongly, yet without intending the least personal disrespect to some estimable naturalists, whom we could name, and whose labours in their generation have, no doubt, materially benefited science. They have, in fact, accelerated that important revolution in the modes of studying nature which are now prevalent, by proving that nothing short of actual observation and minute comparison can be depended upon.—Sw.

DESCRIPTION

Of a specimen killed at Carlton House, June, 1827.

Colour of the head, back, and lesser wing coverts, deep pearl-grey *; the exterior edges of the scapularies and tail coverts paler, approaching to greyish-white. A black band commences at the nostrils, unites with its fellow at the base of the upper mandible, and, becoming broader as it passes backwards, terminates obtusely on the side of the neck: it includes the whole of the upper and under eyelids, and separates the grey colour of the upper parts of the head from the white of the ventral aspect. The (ten) primaries and their coverts are umber-brown; all the former, except the first short or spurious one, have a white space next their quills half an inch in breadth; their tips are pale, as if worn, except the two next the secondaries, which are terminated by a white border. The

* *Cendré bleuâtre pur.*—Temminck.

secondaries and their coverts are blackish-brown, tipped with white. The tail is blackish-brown, with a broad white border; the two central feathers being entirely of the former colour; the adjoining one on each side of them having a minute white tip; and the outer one having the whole of its exterior web and two-thirds of its inner web white; whilst the others have an intermediate quantity of white, according with their situation. The plumage of the whole *ventral aspect* is unspotted white, with a tinge of grey on the flanks, and of broccoli-brown on the linings of the wings. *Bill* greenish-black. *Legs* dark resinous-brown.

Form, &c.—*Bill* rather shorter and broader at the base than that of *Lanius borealis*, but having a sharper ridge and a more slender acute point; tooth very acute. Under mandible more boat-shaped. The *nostrils* are concealed by black bristly hairs, which surround the base of the upper mandible; and there are about six longer bristles at the angle of the mouth. The wings are short, reaching within two inches and a quarter of the end of the tail. The third and fourth primaries are the longest, the fifth is about half a line shorter, the sixth is four lines shorter than the fifth, and the second is just perceptibly shorter than the sixth: the seventh and following ones diminish in succession about two lines each; the first is scarcely half the length of the second, and is much shorter than any of the primaries or secondaries; the third, fourth, and fifth, have their outer webs obliquely narrowed. The *tail* is long and cuneiform, the exterior feathers being nearly an inch and a quarter shorter than the middle ones. The hind toe is more robust than the others, and is equal to the lateral ones in length.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	9	6	Length of the bill, measured along its ridge	0	7½
,, of the tail	4	0	,, of the tarsus	1	0
,, of the longest quill feather	3	9	,, of the middle toe	0	8
,, of the spurious or first primary	1	4	,, of its claw	0	3
,, of the bill from the angle of the mouth	1	0	,, of the hind toe	0	5
			,, of its claw	0	3½

[30.] 3. Lanius elegans. (Swainson.) *White-winged Shrike.*

Family. Laniadæ. *Sub-family.* Lanianæ. Swainson.

Ch. Sp. Lanius elegans, *pulchrè plumbeus subtus candidus, frontulâ capiti concolori, speculo albo conspicuo, caudâ gracili elongato-cuneatâ margine albo percinctâ, remige secundâ sextam superanti; quartâ longissimâ, tarsis rostrum longitudine superantibus.*

Sp. Ch. White-winged Shrike, clear bluish-grey, beneath unspotted white; with a frontlet of the same colour with the head; a broad white band across the wing; a slender and very cuneiform tail, entirely bordered with white; the second quill feather longer than the sixth, the fourth the longest; and tarsi exceeding the length of the bill, (measured from the angle of the mouth.)

A specimen of this handsome Shrike exists in the British Museum, to which it was presented, together with other birds from the fur-countries, by the Hudson's Bay Company. The particular district from whence it was brought, however, is not noted; and we have no account of its habits. It may be at once distinguished from the species mentioned in the preceding pages, by the much greater quantity of white on its wings and tail, its narrower tail feathers, longer tarsi, and less curved claws.

DESCRIPTION

Of a specimen in the British Museum.

Colour of the plumage on the dorsal aspect of the head and body clear bluish-grey; the tail coverts being somewhat lighter, and the exterior margins of the scapularies nearly white. The lateral marks on the head, the wings with the exception of the white parts, and the middle of the tail, are pitch-black. The lateral mark is broader, particularly before the orbit, than in the two preceding species, and the frontlet is scarcely lighter than the crown of the head. There is a white band on the wings, an inch and a half broad, crossing the bases of all the primaries, from the second to the tenth inclusive. The secondaries are broadly tipped with white; their exterior margins, and the whole of their interior webs (with the exception of a black patch near the tips of the first two), are also white. The first primary and the three tertiaries are black. The two central pairs of tail feathers are very slightly tipped with white; the two next pairs have broad white tips; and the two outer pairs have entirely white webs, the shafts alone being brownish. The whole *under plumage*, with the exception of the brownish tips of the quill feathers and the centre of the tail, is pure white. *Bill* and *legs* blackish; the lower mandible not pale at the base, as in *L. borealis*.

Form, &c.—*Bill* shorter than that of *L. borealis*, and a little wider at the base; its curvature much the same, and the tooth equally large. The under mandible is shorter and more

boat-shaped. The *wings* are shorter than those of *L. borealis*, the first or spurious feather proportionably longer. The fourth quill feather is the longest, as in that species; the third very nearly equals it; and the fifth is scarcely a line shorter. The second, however, is a little longer than the sixth; whereas in *L. borealis* it is a little shorter. The sinuations of the exterior webs of the third, fourth, and fifth are the same as in *L. borealis*. The *tail* is more cuneiform than in that species, and the feathers are individually considerably narrower. The exterior tail feather is an inch and a quarter shorter than the central pair. The inner *toe* is equal in length to the outer one; and the *claws* are less curved than in the allied species.

DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	9	9	Length of the bill along the curve of its ridge	0	8
,, of the tail	4	5	,, of the tarsus	1	2½
,, of the longest quill feather	4	2	,, of the middle toe	0	8
,, of the bill from the angle of the mouth	0	11	,, of its claw	0	3¼
			,, of the hind toe	0	5½
			,, of the hind claw	0	4

The *Lanius Nootka* of Dr. Latham (*Natka Shrike* of Pennant), being found on the north-west coast of America, is entitled to appear in this work; but nothing more is known of it than Pennant's description; nor are we certain as to its place in the system.

The Prince of Musignano having laid some stress upon the relative lengths of the quill feathers as specific distinctions of the *Lanii*, and the subject having been touched upon in page 112 of this work; we have drawn up the following table, embodying the information the Prince has given on this head in his Synopsis (p. 72), with that to be derived from the preceding account of the species inhabiting the fur-countries.

TABLE OF THE RELATIVE LENGTHS OF THE QUILL FEATHERS.

Species.	Authority.	Longest quill fr.	Comp. length of 5th.	Comp. length of 2nd.
L. excubitor,	BONAP.* Europ. sp.	3rd.	5th consid. shorter than 3rd.	2nd = 7th.
,, excubitor,	SWAINS. Engl. sp.	3rd = 4th.		2nd = 6th.
,, septentrionalis,	BONAP.	4th.	5th = 3rd.	2nd = 7th.
,, Ludovicianus,	BONAP.	3rd.		2nd = 6th.
,, borealis,	SWAINS.	4th.†	5th a line shorter than 4th.	2nd two lines shorter than 6th.
,, excubitorides,	SWAINS.	3rd = 4th.	5th half a line shorter.	2nd nearly equal to the 6th.
,, elegans,	SWAINS.	4th.†	5th a line shorter.	2nd longer than the 6th.

* The Prince of Musignano, considering the first quill feather as spurious, numbers the second as the first; but in this table we have altered his numeration to agree with our own.

† In these the third quill feather is intermediate in length between the fourth and fifth.

THAMNOPHILINÆ.

We have already shown that in *Nilaus*, Sw., we have a form so nearly approaching to this sub-family, that we may fairly conclude on their approximation. The birds composing this division are typically known by a strong, but considerably more lengthened bill, bent only at the end, where the inflection is abrupt: the tooth, also, is much less developed, although in some species it is still very prominent. The feet are more robust; but the claws, no longer fine or attenuated, are now broad and thick: above all, the economy of these birds is totally different from that of the true Shrikes. They are described, both by Azara and Le Vaillant, as living and searching for their prey among thick foliage; hence their familiar name of Bush Shrikes. Their wings for this purpose are but little used; and we accordingly find these members particularly short and feeble; while the tail is somewhat lengthened, and more or less rounded.

We consider the *Geai longup* of Le Vaillant* (*G. Platylophus*, Sw.,) as representing that form in the circle of *Thamnophilinæ* which conducts us to *Malaconotus*, Sw., the first typical genus at which we arrive. The plumage of these richly-coloured birds is generally vivid; composed of yellow, green, or crimson, blended with black or green; while some few are clothed in the more simple colours of the American type. Much difference is observed in the proportionate strength of their bills; and, in some, the anterior toes are as much united as in the corresponding group of the *Pittæ*, or Short-tailed Thrushes, which these birds obviously represent among the Shrikes. This variation in the structure of the feet takes place, however, in species so nearly related, that it affords no ground for generic distinction. To this group succeeds the American genus *Thamnophilus*, Vieil., known at once by the *rictus* being invariably smooth; the whole organization (excepting, perhaps, the bill) is also much weaker. It is among these we find that close approximation to the *Myotheræ*, or Ant Thrushes, to which we have elsewhere alluded, and which is certainly so close, that we ourselves for a long time suspected it to be a *circular* relation of affinity. Whether such may not eventually prove to be the case, time alone can show; but the following are our reasons for considering the groups as belonging to different families—observing, however, that their relation *may* be cited as

* We cannot discover to what genus our nomenclators have consigned this bird. It is the *Garrulus gallericulatus* of the Ency. Méth.; but in the Paris Museum it is placed, with much more propriety, among the *Malaconoti*. There can be little doubt of its being the *scansorial* type of its own sub-family.

one of the most remarkable instances of *collateral* affinity that the whole circle of ornithology can produce. We must premise, that the apparent essential distinction between the Ant-Thrushes (*Myotherinæ*) and the Bush Shrikes (*Thamnophilinæ*) is this: that the former seek their food upon the ground, and are ambulating birds; while the latter confine themselves to bushes, and are arboreal. This difference in economy is consequently marked by a corresponding difference in the structure of the feet. Those of the *Myotherinæ* (including *Drymophila*, Sw., and certain *Urotomi*, Sw.) have the tarsi much more elongated; the claws slender, and not fully curved; and the lateral scales of the tarsi (excepting in one form, which cannot possibly be confounded with *Thamnophilus*) *uniformly entire* *. The American *Thamnophilinæ*, on the contrary, both in the typical group and in the sub-genus *Formicivora*, have the tarsi shorter, the claws thicker and more curved, and the lateral scales of the tarsi *divided into numerous pieces*. Near, therefore, as is the approximation between these two groups, we have chosen, for the present, to keep them distinct; but so far from wishing to bend Nature to our own views, we shall put the reader in possession of our own doubts on the subject.

First, it may be said, that even admitting the distinctions of the tarsi, as above stated, to be invariable, still the argument simply amounts to this—that Nature has chosen to mark the real transition from the *Thamnophilinæ* to the *Myotherinæ*, in this manner; in proof of which, we have species of *Formicivora* with remarkably short tails, and with tarsi fully as long as in several *Drymophilæ*. Upon what grounds, therefore, are we to believe that a relation, to all appearance so perfect as that between *Thamnophilus* and *Myothera*, is to be called an analogy; when, had it been consistent with our views to include both in the same family, or to place them at the confines of two families, we should have been fully justified in calling the series a most perfect and unbroken line of affinity? Again; is it not a violation of Nature to include such small, weakly-constructed birds as *Formicivora* (some of which are scarcely larger than the Gold-crested Wren) in the same group with birds so large and powerful as the true *Thamnophilinæ*? Thirdly, if this latter objection is overruled by the reply, that *size* cannot enter into generic characters, upon what principle is the little *Pipra albifrons* of the old authors separated from these latter birds (*Formicivora*), when it appears actually to form a passage to *Prionops*, Vieil., one of the groups of Bush Shrikes?

* We here allude only to such species as we have elsewhere described; since no birds require more investigation than the small *Myotheræ* of modern ornithologists: they present some beautiful forms of analogy, representing every family in the circle of the *Dentirostres*: even the Australian genus, *Malurus*, has its counterpart among these pigmy Shrikes. An undescribed species now before us, is a perfect representation of *Laniellus*, Sw.; while others, by their *depressed* bill, typify the Todies and the Flycatchers.

These objections have had their due weight, and they suspended our judgment on this matter for some time. The first, indeed, is so strong, that if our views on the *Insessores* are correct, it can only be accounted for by that property which may belong to typical groups, adverted to in our introductory remarks; that is, of gradually approximating, in proportion as we contract our views, from order to family, from family to sub-family, and from sub-family to genus: so that, in cases where every conceivable intervening form is known, what was in larger groups but a relation of analogy, finally becomes one of absolute collateral affinity; a relation, however, which by no means disturbs the true or direct affinity by which each of these groups revolve, and are united in their own proper circles. An instance of the same intimate relationship may be cited between the true *Merulæ* and the Nightingale-warblers (*Philomelinæ*), in the family of *Sylviadæ;* two groups, whose juxta-position is precisely the same as *Thamnophilus* and *Myothera*, and which, in like manner, evince so close a resemblance, that the *Sylvia turdoïdes* of M. Temminck is described, in the first edition of that author's valuable work on the Birds of Europe, as a true Turdus, under the name of *Turdus arundinaceus;* in which genus it has also been placed by Dr. Latham and others. Here, then, is a case in point, where the analogy between the corresponding points of two family circles is so close, as to amount to what we should be justified in calling, under other circumstances, an absolute and direct affinity. That such, however, is not the case in regard to the *Sylvia turdoïdes*, as connecting the *Merulidæ* with the *Sylviadæ*, will subsequently appear; and, in respect to the supposed affinity between the *Pipra pileata* and the sub-genus *Prionops*, the evidence to be adduced is much more in favour of their direct analogy.

We shall close these remarks—already extended, perhaps, to too great a length—with a hope that they may awaken the attention of ornithologists to these singular relations between the *Thamnophilinæ* and the *Myotherinæ;* not so much to elucidate the groups themselves, as to investigate whether the typical circles, in small assemblages of natural objects, do not insensibly acquire additional properties beyond those which are possessed by larger groups. The only writer in whose works we can trace any opinion on this intricate subject, or who appears to have given an intimation that analogies may blend into affinities, is our friend Mr. Haworth, who, in his new binary arrangement of the Macrurous Crustacea (*Phil. Mag.*), makes the following observation: "The first articles of every dichotomy are often merely *analogies;* but that these insensibly, as we go down the table, to arrive at the genera, *lessen, and blend into the closest affinities.*" Whether this passage, however, can be cited as strengthening our own suspicions, we cannot

well make out, as its author has not yet fully developed his views of natural arrangement.

The other forms which appear to enter among the *Thamnophilinæ* are *Colluricincla* (H. and V.), *Tephrodornis* (Sw.)? and *Prionops* (Vieil.) Of the first we can say nothing, further than it appears to bear the same relation to *Thamnophilus* as *Laniellus*, Sw., does to *Lanius*. It is in *Tephrodornis* that we first detect an evident reduction in the length, size, and power of the tarsi. The wings, which have hitherto been remarkably short and feeble, are now more lengthened and obtusely pointed; while the tail, firm and strong, is either perfectly square, or slightly emarginate. Besides these indications of a new set of characters, we perceive the frontal feathers *somewhat lengthened, and reflected over the nostrils, and the base of the bill*, which they protect and partially cover; the rictus, also, is very strongly bristled. All these characters deserve attention, not only as showing an affinity to *Prionops*, but as being the first development of that structure so fully exemplified in the *Edolianæ*.

Tephrodornis is still more interesting, as containing several small species, found in the Indian islands; one of which we strongly suspect is the *Muscicapa hirundinacea* of Reinwaldt, which, but for its size, would unquestionably have been long ago referred to this family. The bill exhibits the same formation as that of *Lanius virgatus*, Tem., but on a very small scale, and has not the least depression, except at its base. This little bird is not much larger than the smallest *Formicivora* yet discovered; but we are unacquainted with any form by which the two groups are connected. In *Prionops*, the feet are also weak, the tail nearly square, and the wings still more lengthened, broad, and ample. This curious bird is said to frequent the ground; and should it eventually prove an annectant form between this and the next sub-family, we have another proof of that remarkable partiality which Nature appears to evince, of making her transitions from one family to another by means of groups strictly terrestrial.

The bill of *Prionops* is fully as slender as that of *Colluricincla;* while the similarity of this type to *Platylophus* in the structure of the feet, the *rictus*, the frontal feathers, &c., sufficiently indicates in what manner the aberrant forms of the *Thamnophilinæ* are united *in a circle of their own*. Whether we regard *Tephrodornis* as the last genus in this division, or as the first in the next, its affinity to both is unquestionable, and we may therefore at once proceed to the sub-family,

EDOLIANÆ.

Characterized by a bill broad at the base, and compressed on the sides; the rictus being, in most cases, defended by very stiff and lengthened bristles; and the upper mandible no longer provided with that distinct tooth which belongs only to the two preceding divisions. The construction of the feet, likewise, deserves particular attention, as being formed upon a peculiar model. In every species yet discovered, these members are short, and the hind toe so much developed, as generally to exceed the length of the tarsus, and to be little shorter than the middle toe. This is very apparent in the genus *Edolius*, Cuv., and prevails, in a less degree, through the kindred genera *Ocypterus*, Cuv., and *Analcipus*, Sw. The wings, in all these groups, are much lengthened, particularly in *Ocypterus*, where they exhibit an hirundiform structure, the first quill being longest, and the rest graduated. So far, therefore, we see a conformation totally distinct from a *Lanius* or a *Thamnophilus*; but the subordinate types of this division are very imperfectly known; nor can we pronounce, with any certainty, which may be the typical groups. The original *Vanga* of Buffon, together with some other very curious birds from Madagascar, where that species is also found, lead us to suspect the existence of a group closely related to *Ocypterus*, but whose typical characters we have not sufficiently ascertained *. Of the three genera above named, *Ocypterus* and *Analcipus* appear the most typical; inasmuch as the bill, in certain species of *Edolius*, assumes much of that depressed form belonging to the *Ceblepyrinæ*. The situation of the Australian *Vanga destructor*, and its allies, is still more uncertain; while *Sparactus* must now be forgotten: the specimen upon which this genus was founded having turned out, according to M. Cuvier, to be the fabrication of a dealer! The immediate passage from this division to the

CEBLEPYRINÆ

is unknown, as we consider our former suspicions on this union being effected by *Muscicapa labrosa* (Zool. Ill., pl. 175) not well founded; that bird being, in all probability, a true *Ceblepyris*, Cuv.

The birds of this group are too remarkable in themselves to be easily mistaken. Retaining much of that general form of bill which belongs to *Edolius*, there

* The Shrikes of Madagascar are so little known, as to be rarely, if ever, seen in museums; and it unfortunately happens that, notwithstanding the greatest care, those few now in the Royal Museum at Paris are too much injured by time, to admit of accurate description.—Sw.

is, nevertheless, a greater depression, and consequently a greater weakness, exhibited in this member; the nostrils are equally concealed, but the frontal feathers, instead of being lengthened, and reflected forwards, are short and velvety; while the rictus, no longer provided with stiff bristles, is merely furnished with short cetaceous feathers. Continuing this comparison to the tarsi and the wings, we find the first rather longer, and the hind toe shorter; but the form of wing, and the arrangement of the quills, in *Ceblepyrus* and *Edolius*, are much alike. The most remarkable distinction, however, of this curious bird, is the spine-like rigidity of the rump feathers, which, when pressed against the hand, feel as if they were intermixed with prickles, an effect produced by the bending of the shafts *, one portion of which is very thick, while the other becomes suddenly very slender; by pressure, the outer half is bent, and presents a sharp angle to the touch, which feels *like* a spine. It is worthy of remark, that the Cuckoos, which, in the tribe of *Scansores*, occupy the same relative station as the *Ceblepyrinæ* do among the Shrikes, should also exhibit this singular structure. On the whole, distinct as this sub-family is from the last, yet there is such a decided and direct affinity between them, that we must altogether reject the idea of placing the two groups at opposite points in the circle of *Laniadæ*.

No ornithologist has yet attempted to arrange this group, or to characterize the different modifications of form which it presents. We must, therefore, be content to notice those only which we have personally examined. Premising that all the species seem restricted to the hot latitudes of the Old World, and that they have received the name of Caterpillar-catchers from feeding principally, as Le Vaillant informs us, on such soft insects.

We have already intimated that the true passage from the *Edolianæ* to the *Ceblepyrinæ* may be yet undiscovered. If, however, we may consider the absence of spinous feathers in certain of the latter birds, together with an unusually compressed bill, as indications of such a transition, we shall find these characters in the genus *Erucivora* †, a group of small birds, hitherto found only in the Indian Islands. We are, nevertheless, inclined to believe that the true annectant type is at present unknown. From *Erucivora* to the typical genera *Ceblepyris* and *Phœnicornis*, as now modified, the gradations are almost imperceptible; the first seems

* An error on this subject appears to have crept into the *Règne Animal*, where it is stated, vol. i., p. 363, that "*Les tiges sont un peu prolongées, roides et piquantes des plumes de leur croupion.*" We have never seen one species where the feathers are so constructed.

† We first detected this form among the stores of the Zoological Society; but in conformity, as we were told, with the rules of the Society, we were prohibited from taking any notes. Fortunately, however, the liberality of MM. Cuvier and Geoffroy St. Hilaire enabled us to make full use of the specimens at the Garden of Plants, by which means we have here been enabled to define the group.—Sw.

to typify the plain-coloured, lineated *Thamnophilæ*, and the grey *Ocypteri;* while the latter are decked in the lively colours of the African *Malaconoti* and of the genus *Analcipus*. Close to *Phœnicornis* may be placed *Ptiliogonys*, as opening a passage to the next division, or as comprised within its limits. *Oxynotus* is another and a very peculiar type; to which we may liken *Sphecotheres*, from the structure of the bill, the wings, and the tarsi. But the want of the puffy, spinous tail feathers in this latter bird removes it, we think, from this family. M. Cuvier has arranged the larger species of *Ceblepyrini* under the generic name of *Graucalis;* but we have failed in discovering their supposed peculiarities. It is easy to perceive that, by the recent discovery of the Mexican genus *Ptiliogonys* (Sw.), the transition from the Caterpillar-catchers to the sub-family

TYRANNINÆ

is rendered apparent, particularly when we compare *Ptiliogonys cinereus**, Sw., with the *Muscicapa albicapilla* of Vieillot, and some other obscurely-known species, wherein the head is crested, the nostrils nearly round, the rictus but slightly bearded, and the bill short, triangular, and rather compressed on the sides.

We now fairly enter among the American Fly-catchers, of which the whole of this sub-family is entirely and exclusively composed. We have already done something towards the right understanding of the more typical species†; but, as the entire group requires much elucidation, we shall now enumerate its distinguishing characters, as opposed to the whole of the Fly-catchers belonging to the Old World. The feet of the *Tyranninæ*, however diversified the species may be in size or in other points of structure, are always much stronger than those of the genuine *Muscicapæ*, not as regards the length of the tarsi, for in both this part is invariably short, but in respect to the length and thickness of the toes and claws; the latter, in particular, are large, gracile, and very acute, much resembling those of the true Shrikes. In the typical species (as *T. intrepidus, crassirostris, crudelis*, &c.), the hind and the middle claw are nearly equal; but in the lesser species, or those most liable to be confounded with the Old World Muscicapæ, (as *Tyrannula Saya, nunciola*, &c.,) the hind claw is by much the largest. A further distinction is afforded between these groups by the scutellation of the tarsi. The scales of the *Tyranninæ*, as if intended to give greater strength and support to the muscles of the feet, wrap completely round the tarsi, and only meet at the

* Zoological Illustrations, Second Series, pl. 62. † Journal of the Royal Institution.

back part; so that, in fact, the lateral scales so conspicuous in *Muscicapa* are entirely wanting among the Tyrant Fly-catchers. Then, as to the structure of those members employed in flight. The arrangement of the primary quills in this group is very peculiar: the wings are so far pointed, that the first and second quills are very little shorter than the third and fourth, which always exceed the others; sometimes, indeed, (as in *T. intrepidus, vociferans,* and *crudelis,*) the wings are so admirably adapted for rapid flight, that the second quill is as long as any of the others, and the first very slightly shorter; while even among the smallest *Tyrannulæ* the first quill is invariably more than three-fourths the length of the longest. Now, upon looking to the Fly-catchers of the Old World, we see an arrangement strikingly different: the first quill is invariably spurious, that is, so short as to appear but half developed; the second and third are progressively graduated; and the full length of the wing is only attained by the fourth and fifth quills. Hence these members, however lengthened they may be in particular species, assume a rounded form, and betray a decided inferiority in the power of flight to that which is possessed by the American Fly-catchers. Even in the well-known *Muscicapa atricapilla* of Southern Europe, whose wings are certainly longer and more pointed than any of its congeners, the first quill is very small. As connected also with the most important economy of those groups which feed upon the wing, and consequently depend for subsistence on their flight, the tail deserves great attention: and here, likewise, we may detect a strong characteristic of the *Tyranninæ,* by which they are detached from all others of similar manners. There is a peculiar breadth in the caudal feathers of all the species, particularly towards their extremity; and although this member is either forked, divaricated, or square, we have never met with one species wherein the tail is rounded *. Now, among the Old World *Muscicapæ* the very reverse of this structure is most prevalent: the tail, if not narrower, is scarcely ever divaricated, never forked, and very rarely perfectly square at its extremity. Even in the *Muscicapa* (*Seïsura*) *volitans* of New Holland, which bird has been expressly stated to have an even tail †, we find this member, in three specimens now upon our table, decidedly rounded. There are, nevertheless, some few species of true *Muscicapæ* where the tail is really even; and such exceptions, however rare, render this distinction of less value than that furnished by the wings and tarsi.

* The Rufous Tyrants, formerly referred by us to this sub-family, have a rounded tail; but we have since placed them with the *Myotherinæ,* under the generic name of *Dasycephala.*

† "The genus Seïsura is, however, sufficiently distinguished from *Ripidura by the tail being even, not rounded,* at the end."—*Horsfield and Vigors, Linn. Trans.,* vol. xv., p. 250.

Lastly, the formation of the nostrils must not pass unobserved. One of the typical characters of the Tyrant Shrikes is to have the aperture perfectly round, or at least very nearly so; and it is only among some small species of *Tyrannulæ* that the membrane is so far developed as to reduce this opening to a more oval form: but in the Old World *Muscicapæ* the aperture is linear-oval, and in the typical species linear.

No satisfactory results have attended our attempts to draw characters from the different modifications observed in the bills of these two races; and, indeed, when we see how completely this member differs in size, form, and thickness, in such birds as *Tyrannus crassirostris* and *intrepidus*, or again in *Savanna* and *audax*, we are convinced how futile will be all such attempts at present. The truth appears to be, that almost every species, from our personal observations on these birds, seems attached to certain species or genera of insects, which may be considered its peculiar food; and these, varying in size and habits, are captured by bills of different modifications. The whole of Tropical America may be said to swarm with the *Tyranninæ;* so much so, that several individuals of three or four species may be seen on the surrounding trees at the same moment, watching for passing insects: each, however, looks out for its own peculiar prey, and does not interfere with such as appear destined by nature for its stronger or more feeble associates. It is only towards the termination of the rainy season, when myriads of the *Termites* and *Formicæ* emerge from the earth in their winged state, that the whole family of Tyrants, of all sizes and species, commence a regular and simultaneous attack upon the thousands which then spring from the ground.

On duly weighing the peculiar distinctions of the small American Tyrants, we feel justified in the suspicion that they do not belong to the same group as the genuine *Muscicapæ;* while, on the other hand, these little birds are so blended with the more typical Tyrants, that they can scarcely be detached from them even as a genus. This will be manifest to any one who examines *Tyrannus calcaratus, ferox*, and *crinitus* *, or *Tyrannula Saya, querula, barbirostris, musica*, or *nigricans* †. The natural subdivisions of this group also require much investigation: we can, indeed, feel little doubt that the typical genus is *Tyrannus*, and that the *T. crudelis* * exhibits a greater perfection of structure than even the well-known American Kingbird (*T. intrepidus*). Neither is it difficult to perceive that nature, upon entering the group by means of *Ptiliogonys*, advances towards the Swallow-tailed Tyrants by two different routes; but one of these presents an *hiatus*, on its

* Journal of the Royal Institution. † Philosoph. Magazine and Annals, June, 1827, p. 366.

touching the confines of the true *Laniadæ*, which cannot be satisfactorily filled up by any bird we know of. The only one which betrays a sufficient departure from its type to justify an opinion of its close relation to *Lanius* is the common *Tyrannus sulphuratus*, or *Bentivi**, of Brazil. But the lengthened bill of this bird, viewed in its supposed connexion with *Tyrannus* and *Lanius*, appears perfectly anomalous; for as this member in the *Tyranninæ* is usually short, or at least moderate, and in *Lanius* is still shorter, so we should expect to find in a bird which really connected these groups, that the bill would have an intermediate length, or at least not be prolonged more than that of any one bird in the two sub-families. That the *Bentivi*, however, makes the nearest approach to *Lanius* of any bird yet discovered, is, we think, sufficiently evident; not only from its greatly-compressed bill, but by feeding upon reptiles, and thus becoming partly carnivorous. We have more than once taken from the stomach of this species lizards in an entire state, sufficiently large to excite surprise how they could possibly have been swallowed by the bird. Azara likewise says, "*Les Bientiveos*" (by which name this bird is also known in Brazil) "*s'approchent des animaux morts pour s'emparer des débris et des petits morceaux de chair que laissent les Caracaras*," &c. This, indeed, we never witnessed, but we can well believe the fact; not merely on the high authority of such an observer as Azara, but as being supported by a peculiar structure in the bird: its claws, unlike those of all other Tyrants, are but slightly curved; thus enabling the bird, when so engaged, to walk without difficulty upon the ground.

The length of the bill is, then, the only peculiarity in the *Bentivi*, which appears anomalous; nor can it, we apprehend, be explained in any other way than by comparing it with the bills of certain Madagascar Shrikes, closely related to *Tephrodornis*, which group, be it remembered, stands on the confines of the *Edolianæ*. In all these birds the prolongation of the bill, and its general form, are so much the same, that it is impossible to deny an apparent relationship between them; nor do we hesitate in expressing our opinion, that the affinity which *Saurophagus* bears to *Tephrodornis* is to the full as great, if not greater, than that between *Saurophagus* and any form yet discovered among the *Lanianæ*.

That the *Bentivi* of itself is sufficient to prove the union of the three aberrant groups of the *Laniadæ* must not, however, be inferred, any more than that it actually connects the *Tyranninæ* with the *Lanianæ*; but that it exhibits, both in

* The striking dissimilarity between this bird and the true Tyrants induced us, some years ago, to detach it from that group as a sub-genus, under the name of *Pitangus*, associating with it the broad-billed *Lanius pitangua* of Linnæan authors. Much doubt, however, seems to hang over the true affinities of this latter bird; and the above name, thus rendered doubly objectionable, we propose to amend by substituting that of *Saurophagus*. Another typical species has recently come into our possession.—Sw.

its structure and its manners, sufficient peculiarities to render both these affinities highly probable, appears to us, at least, unquestionable. Whether it is a general property in all aberrant groups to shew a greater tendency to unite themselves into a circle, than to pass by a simple series of progression into the typical groups, we will not now discuss; but it certainly appears that the first of these tendencies is much more apparent than the last; or, at least, that it is to the full as strongly manifested, in all such groups as have been sufficiently analysed.

In noticing the peculiar habits of *Falcunculus*, among the true Shrikes, we have expressed our suspicion that it may represent, in its own narrow circle, the tribe of *Scansores*. Now, it may be worth remarking, that did we feel justified in assigning to it this station, it would occupy that part of the circle of *Lanianæ* which touches the *Tyranninæ;* and we might thus account for the *Bentivi* and the Frontal Shrike, so brought into contact, being clothed in the same coloured plumage.

But our belief, that the absolute union of the *Edolianæ* with the *Tyranninæ* will hereafter be discovered, is materially strengthened by the perfect similarity of manners between certain *Edolianæ* and the fork-tailed Tyrants of Paraguay; and this affinity, even in external form, has been thought so strong, as to have satisfied Mr. Vigors that the two divisions actually followed each other in a simple circle, without the intervention of the *Ceblepyrinæ* *. The following details, written by two eye-witnesses of the facts they describe, are so important to this question that we transcribe them *verbatim*.

The manners of the African Drongos are thus described by M. Le Vaillant:—

"Elle fréquente les grandes forêts et vit en petites troupes; elle fait sa principale nourriture d'abeilles qu'elle guette et qu'elle saisit à leur passage absolument de la manière que les gobe-mouches le pratiquent à l'égard des mouches et des insectes; mais c'est particulièrement le soir, après le coucher du soleil, et le matin avant son lever, qu'elle chasse de préférence ces industrieux insectes; et pour cet effet le petites bandes se rangent le long du bois et s'y perchent sur un arbre isolé, mort ou ayant beaucoup de branches mortes, afin de mieux saisir le moment du départ ou de l'arrivée des abeilles lorsqu'elles sortent du bois pour aller recueiller sur les fleurs le miel et la cire, ou qu'elles reviennent chargées de butin. En voyant de loin ces oiseaux faire leur chasse et voltiger en désordre autour et

* The *argumentum ad verecundiam* might here be employed with manifest advantage; and this is, perhaps, on particular occasions, the best line of reasoning that can be adopted. But as we desire more to elicit truth, than to support a theory, so we prefer that our views of natural affinities should entirely repose on the facts adduced in their support. Besides, it may be thought somewhat unfair to quote the authority of a naturalist on some occasions, and slight it altogether when his opinions happen to be against our own.

à une certaine distance d'un arbre, et revenir ensuite sur le même arbre, on peut d'autant moins se figurer ce qui les excite à tant des mouvemens qu'il y en a quelquefois vingt, trente perchés sur cet arbre, les uns y revenant, les autres en partant tour-à-tour et incessamment ; ce qui forme une scène très animée et même bruyante ; car ils ont tous un cri qu'ils répètent à chaque instant et qu'on exprime très-bien par *pia-griach*, *griach*. Qu'on s'imagine voir une trentaine d'oiseaux voltigeant pêle-mêle autour d'un arbre et faisant tous les petits détours que nécessitent le vol rapide et les crochets des abeilles qui elles-mêmes cherchent à eviter leur ennemi ; qu'on se représente quelques-uns de ces oiseaux manquant leur proie, se revirant aussitôt vers une autre abeille, faisant quelquefois cinq à six pirouettes de suite en cabriolant à droit, à gauche, et en haut, en bas, dans tous les sens enfin, et ne venant se reposer que lorsqu'ils ont hapé l'abeille ou qu'ils se sont fatigués inutilement, on aura une idée assez exacte de tout le manège des Drongos. Ils se posent en lieux élevés et découverts pour épier les insectes ; ils se volent aussi au-dessus des eaux et des plaines pour faire leur petite chasse à la manière des hirondelles ; et ils y choisissent pour se percher, de petites branches ou des joncs."

The economy of the Fork-tailed Tyrants (*Milvulus*, Sw.), as described in the following extract from Azara, is almost precisely similar.

" Les *Suiriris* volent avec beaucoup d'aisance et ils aiment la compagnie de leurs semblables ; car, avant leur départ de Paraguay, on les voit réunis en troupes de cent et deux cens individus, dont quelques-uns se tiennent, vers le soir, perchés à la cime d'un arbre très élevé et touffu, tandis que les autres volent autour en tourbillon confus, se jetant sur les insectes et s'exerçant à cette chasse ; ils se posent ensuite sur l'arbre d'où ceux qui y étaient placés partent, pour que la bande tournoyante soit toujours aussi nombreuse. Les mêmes arbres sont des lieux de rendezvous, et ces oiseaux s'y rassemblent pendant plusieurs soirées entières, avant que de partir ; à leur retour ils se montrent deux à deux, et quelquefois en petites troupes, qui ne tardent pas à se diviser par paires."

The difficulty of detecting analogical relations between the higher and the lower groups of ornithology, seems to be increased in the same ratio as the groups to be compared differ in value from each other : and this must be obvious, when we consider that in proportion as we descend in the scale of groups, and limit our inquiries, so do we contract the field of comparison. The reader, it is hoped, will bear this in remembrance, while studying the following—

ANALOGIES OF THE LANIADÆ.

Typical Characters.

DENTIROSTRES.	Bill short, toothed; seize their prey by the foot . . .	*Lanianæ.*
CONIROSTRES .	Bill lengthened, compressed; feet strong, robust . . .	*Thamnophilinæ.*
SCANSORES . .	Tarsi short; hind toe lengthened	*Edolianæ.*
TENUIROSTRES	Bill weak; feed only on soft substances; rictus smooth .	*Ceblepyrinæ.*
FISSIROSTRES .	Bill greatly depressed; nostrils round; feed upon the wing	*Tyranninæ.*

The skulking, thievish propensities of the Bush Shrikes and the Jays, in plundering the eggs and destroying the young of other birds, is thus explained by the relation of the *Thamnophilinæ* to the *Conirostres*. The great developement of the tail, in nearly all the true *Edolinæ*, the boat-shaped form which it assumes in one species, the singular frontal crests of two others, and the pointed and metallic-coloured neck-feathers in several, are all characters which we see more developed among the *Rasores*, than in any other tribe or order of birds. The soft and tender food of the Caterpillar-catchers evinces that even the *Tenuirostres* may be represented by insectivorous Shrikes; the analogy between the *Tyranninæ* and the *Fissirostres*, although sufficiently evident, is not, perhaps, at first sight, so striking.

It may, on the other hand, be urged, that the *Edolianæ*, by means of *Ocypterus*, bear a much closer resemblance to Hirundo among the *Fissirostres*, than to the *Scansores;* and this analogy appears so strong, that we were for a long time much perplexed by the apparent violation of Nature committed in the foregoing table. A little reflection, however, convinced us, that if analogies are really correct between any two points in different circles, they must hold good between all the other points; a test by which the above supposition, in its further details, gives the most contradictory results. Whether we compare the general habits, or the weakness of structure of the *Tyranninæ*, coupled with the fact, that several of the smaller species have the two outer toes much united, we feel disposed to consider these evidences as certainly in favour of this group being the true representation of the *Fissirostres*.

A very singular and novel fact also, which we shall now make use of, is another argument strongly corroborating this analogy. The following is an extract from our notes on the Zoology of Brazil:—

"7th April, 1817. Sitting in the house this morning, I suddenly heard a

splash in the lake close to the window; on looking out, I saw a common Grey-breasted Tyrant *, perched upon a dead branch hanging over the water, pluming and drying itself. Intent upon watching this bird, I saw it, within a quarter of an hour, dive into the lake two successive times, after some small fish or aquatic insects, precisely like a Kingfisher: this action was done with amazing celerity, and it then took its former station to plume and dry its feathers."—(Pernambuco.)

This anecdote, so beautifully illustrating the analogy of the *Tyranninæ* with the *Fissirostres* and the *Natatores*, we consider as conclusive on the subject. We shall have occasion, however, to illustrate this matter further, on reviewing the arrangement of the next family.

[31.] **1. Tyrannus intrepidus.** (Vieillot.) *King-bird.*

Sub-family. Tyranninæ, Swains. *Genus.* Tyrannus, Brisson. Swains.
Tyrant Fly-catcher, Penn., *Arct. Zool.*, ii., p. 384, No. 263.
Lanius tyrannus, Lath. *Ind.*, i., p. 81, sp. 53.
Tyrant Fly-catcher, or King-bird (*Lanius tyrannus*), Wilson, ii., p. 66, pl. 13, f. 1.
Tyrannus pipiri, Vieillot, *Ois. de l'Am.*, i., p. 73, pl. 44.
Tyrannus intrepidus, Idem, *Enc. Méth.*, ii., p. 349. Idem, *Gal. des Ois.*, 214, but not the plate 133, which is a different species.
Muscicapa tyrannus, Bonap. *Syn.*, p. 66, sp. 76.

M. Vieillot, in his *Ois. de l'Am.*, called this species *Tyrannus pipiri*, but has since judiciously abandoned a name so unmeaning, for the more appropriate one of *intrepidus*. It is not a little remarkable that this writer, who appears to describe the habits, &c., of this species from personal observation, should have given (*Gal. des Ois.* pl. 133), as the representation of the female, the figure of another species, which we have never seen, and certainly is not known to inhabit North America. We rather suspect, however, that the fault must lie with the draughtsman, who seems to have coloured this figure in such a manner as to produce a fictitious species—the rufous wings, tail, and olive back, representing the *Tyrannus crinitus;* and the white under plumage and crest being those of *intrepidus*. No such species exists in the Paris museum, nor have we ever seen

* *Tyrannus crudelis*, Swains. *Monog.*

it in specimens or books; but should it really exist in nature, it may deservedly bear the name of *T. Vieillotii*.—Sw.

The well known King-bird is common on the banks of the Saskatchewan, and ranges in summer to the fifty-seventh parallel of latitude, or beyond it. It arrives at Carlton-house early in May, and retires, after having reared its young, in the beginning of September, wintering to the southward even of Georgia. It is seen during summer in all parts of the United States, and breeds in Pennsylvania, and most probably in all the intermediate districts to the middle of the fur countries. Its jealousy of the intrusion of other birds into its haunts in the breeding season, and the boldness and activity with which it attacks and drives off even the biggest and fiercest of the birds of prey, has been well described by Catesby, and other writers on American Natural History, but by none with the minuteness, truth, and poetical feeling of Wilson. It is of the King-bird that Mr. Drummond speaks in the following passage of a letter relating to the birds he noticed at Carlton-house:—"There is another small bird that deserves to be noticed for the courage with which it attacks all others that venture near its residence: it is a species of Fly-catcher, about the size of a lark; and the manner in which it assaults a large bird is truly amusing. It soars above its opponent, and then darting down on its back, applies its beak, with all the strength it possesses, to its head, sometimes remaining in this position for a minute or more, and then returns in triumph to its station on the top of some neighbouring bush or small tree, where it resumes the occupation of watching for flies*. During the whole of this attack it utters a shrill chattering note with great vehemence.

"The King-birds arrive in Pennsylvania about the twentieth of April, sometimes in small bodies of five or six together, and are at first very silent, until they begin to pair and build their nest. This generally takes place about the first week in May. The nest is very often built in the orchard, on the horizontal branch of an apple-tree; frequently also, as Catesby observes, on a sassafras-tree, at no great height from the ground. The outside consists of small slender twigs, tops of withered flowers of the plant yarrow, and others, well wove together with tow and wool, and is made large, and remarkably firm and compact. It is usually lined with fine, dry, fibrous grass, and horsehair. The eggs are five, of a very pale cream-colour, or dull white, marked with a few large spots of deep purple, and other smaller ones of light brown, chiefly, though not altogether, towards the great end. They generally build twice in the season."

* *Botanical Miscellany*, by W. J. Hooker, ii. p. 186.

"The King-bird is altogether destitute of song, having only the shrill twitter above mentioned. His usual mode of flight is singular: the vibrations of his broad wings, as he moves slowly over the fields, resemble those of a hawk hovering and settling in the air to reconnoitre the ground below; and the object of the King-bird is no doubt something similar; viz., to look out for passing insects, either in the air, or among the flowers and blossoms below him. In fields of pasture, he often takes his stand, on the tops of the mullein and other rank weeds, near the cattle, and makes occasional sweeps after passing insects, particularly the large black gad-fly, so terrifying to horses and cattle. His eye moves restlessly around him, traces the flight of an insect for a moment or two, then that of a second, and even a third, until he perceives one to his liking, when, with a shrill sweep, he pursues, seizes it, and returns to the same spot to look out for more. This habit is so conspicuous when he is watching the bee-hive, that several intelligent farmers of my acquaintance are of opinion, that he picks out only the drones, and never injures the working bees. Be this as it may, he certainly gives a preference to one bee, and one species of insect, over another. He hovers over the river, sometimes for a considerable time, darting after insects that frequent such places, snatching them from the surface of the water, and diving about in the air like a swallow, for he possesses at will great power of wing. Numbers of them are frequently seen thus engaged for hours together, over the rivers Delaware and Schuylkill, in a calm day, particularly towards evening. He bathes himself by diving repeatedly into the water from the overhanging branches of some tree, where he sits to dry and dress his plumage *."—(Wilson, *l. c.*) The King-bird preys chiefly on winged insects, and feeds also on berries of various kinds.—R.

DESCRIPTION

Of a male, killed at Carlton-house, May, 1827.

Colour of the upper aspect of the head, when the plumage is smooth, shining velvet-black; but when the feathers are ruffled, a spot of bright orpiment-orange appears on the crown. The *dorsal aspect*, in general, is blackish-grey; the rump feathers and tail coverts being slightly edged with white. The *tail* is pitch-black, tipped with white a quarter of an inch broad. The quill feathers and greater coverts are hair-brown; the secondaries edged and tipped with white. The *under plumage* is pure white, except the breast, which is tinged with ash-grey; and the wing linings, which are pale greyish-brown. *Bill*, above and below, pitch-black. *Legs* bluish-black.

* The whole of this passage is most important and interesting. It appears to me, however, much more probable, that this species, like the *Tyrannus crudelis* already noticed (p. 137), dives after small fish, or aquatic insects, and thus typifies the analogy of this family to the King-fishers among the *Fissirostres*, and to the *Natatores*.—Sw.

Form, &c.—*Bill* considerably depressed; wide at the base, gradually narrowing to the tip. Upper mandible with convex sides, meeting in an obtuse ridge, the tip of which has a slight notch on each side, and curves down, so as to form a small hook; there is a raised central line within. The lower mandible is flatly convex. Six strong bristles stand out above the angle of the mouth; and the nostrils, which are oval, are partly concealed by small bristles and the projecting feathers of the forehead. The tips of the *wings* reach within an inch and a quarter of the end of the tail. The second *quill feather* is the longest; the third is very nearly equal to it; the first is about two lines shorter than the second, and as much longer than the fourth; the fifth, sixth, and seventh diminish successively a quarter of an inch each; the tenth and the secondaries are about an inch and three-quarters shorter than the second; the second, third, and fourth have their outer webs obliquely narrowed; and the first and second have their inner webs very deeply and abruptly notched close to their tips; the third is less deeply notched. The secondaries are somewhat truncated and scolloped at the ends, with a slight projection of their mid-ribs. The *tail* is long, and even at the end; though, from the inner webs of its feathers being broader than the outer ones, and more sloped away at their ends, it appears slightly emarginated when fully spread. The hind toe is longer and stronger than the outer or inner one, and its claw is of equal size with that of the middle toe.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	8	9	Length of the bill, measured along its ridge	0	8
,, of the tail	3	6	,, of the bill from the angle of the mouth	1	1
,, of the longest quill feather	4	0	,, of the tarsus	0	9½
,, of the folded wing	4	10	,, of the middle toe	0	6
			,, of its claw	0	3

The dimensions were the same in a considerable number of specimens.

The *female* has a narrow white tip to the tail, and a smaller orange-coloured spot on the crown. This spot is altogether wanting in the young.

LANIUS BOREALIS.

London, Printed for John Murray, Successor to the Admiralty, January 1, 1838.

TYRANNULA SAYA.

...nder Printed for John Murray, Bookseller to the Admiralty, ... 1828

[32.] 2. Tyrannus borealis. (Swainson.) *Northern Tyrant.*

Sub-family, Tyranninæ. Swains. *Genus*, Tyrannus. Brisson. Swains.

Ch. Sp. Tyrannus borealis, *super xerampelinus : alis caudâque forficatâ obscurioribus, cristâ incumbente concolori, mente ventre et tectricibus caudæ inferioribus pallidè flavescentibus, mandibulâ inferiori pallescenti, tarsis brevibus.*

Sp. Ch. Northern Tyrant, above, dark greyish-brown ; wings and forked tail nearly blackish-brown ; no flame-coloured spot on the crown ; under plumage mostly greyish-yellow ; inferior mandible pale ; tarsi short.

Plate xxxv. The Female.

Of this species, which is believed to be hitherto undescribed, only one specimen was procured. It was shot on the banks of the Saskatchewan as it was flying near the ground ; but no information was obtained respecting its habits or nidification. Like the King-bird, it is found in the fur-countries only in summer. It is a considerably smaller species than the *Tyrannus intrepidus*, and may be at once distinguished from it by the forked tail not tipped with white, and much shorter tarsi, as well as by very evident differences in the colours of the plumage. Its bill is rather more depressed at the base, and its lower mandible is dissimilar in colour to the upper one, and is larger than that of *T. intrepidus*. The relative lengths of the quill feathers of the two species are also different ; the first of *T. borealis* being rather longer than the third, and the fourth being farther apart from the latter than in *T. intrepidus*.

DESCRIPTION

Of a *female*, killed at Cumberland House, lat. 54°.

Colour of the head, back, and lesser wing and tail coverts dark hair-brown ; of the quill feathers and tail dark-umber or blackish-brown. The margins of the greater coverts are paler ; and the secondaries are slightly edged at the tip with soiled white. *Under surface.*—The throat, belly, and under tail coverts are very pale greyish-yellow. The flanks and wing linings are broccoli-brown, and the breast exhibits that colour, with a tinge of the yellowish hue of the belly. The *bill* is shining blackish-brown above, and dull brownish-yellow beneath, with an umber-coloured tip.

Form, &c.—The shape of the *bill* is very nearly the same as that of the King-bird, and it is similarly furnished with bristles at the base. The tips of the folded *wings* are rather more than an inch shorter than the end of the tail. The second quill feather is the longest ; the first

is two lines, and the third two lines and a half shorter than the second; the fourth is four lines and a half shorter than the third; and the following ones decrease in succession a quarter of an inch each. The second and third have their outward webs obliquely, but distinctly sinuated; and the inner webs of the three first are slightly narrowed towards their points. The tips of these three feathers are comparatively broad, as they want the deep and sudden sinuation so remarkable in the same feathers of the King-bird. The secondaries are very obtuse, but their ends are not scolloped or emarginated, as in the King-bird. The *tail* is forked, the central pair of feathers being more than a quarter of an inch shorter than the exterior ones. *Tarsi* short. *Nails* like those of *T. intrepidus*, the hind one rather larger than the middle one.

Dimensions

Of the *female*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	8	0	Length of the bill, from the angle of the mouth	0	11
,, of the tail	3	0	,, of the tarsus	0	7
,, of the longest quill feather	3	8	,, of the middle toe	0	6
,, of the folded wing	4	4	,, of its claw	0	3
,, of the bill, measured on its ridge	0	7½			

[33.] 1. Tyrannula Saya. (Swainson.) *Say's Fly-catcher.*

Sub-family, Tyranninæ. *Genus*, Tyrannula. Swains. *Zool. Journ.*
Muscicapa Saya. Bonap. *Syn.*, p. 67. No. 81. *Orn.*, i., p. 20, pl. 2, f. 3.
Tyrannula pallida *. Swains. *Synop. Mex. in Phil. Mag.*, No. xv.

Ch. Sp. Tyrannula Saya, *pallidè brunnescenti-grisea, abdomine crisso et tectricibus caudæ inferioribus ferrugineis, alis acutis: remigibus caryophillinis, caudâ æquali nigrescenti.*

Sp. Ch. Say's Fly-catcher, pale brownish-grey; belly, vent, and under tail coverts, ferruginous; wings pointed; quill feathers brown; tail even, blackish.

Of the habits of this bird little is known. It was discovered by Mr. Titian Peale, on the Arkansaw River, within twenty miles of the Rocky Mountains, and first described and figured by the Prince of Musignano in the work above quoted. Mr. Peale informs us that its voice is somewhat different from the Peewee (*Musci-*

* We received a specimen of this bird from Mexico, and designated it by the name of *Tyrannula pallida*, before the first volume of Prince Charles Bonaparte's American Birds had reached this country. But we feel pleasure in relinquishing our former specific name, and adopting that which commemorates the valuable services and diversified labours of one of the first zoologists in America.—Sw.

capa fusca), which bird it strongly resembles, and that its nest was built on a tree, and consisted of moss and clay, with a few interwoven blades of dried grass. Its young were ready to fly in July. One individual appeared at Carlton House on the 13th of May, when it settled on a low garden-fence, flitting from place to place when disturbed. It was not difficult of approach, and was immediately secured for a specimen. A female was killed afterwards.

DESCRIPTION

Of a specimen, killed at Carlton House, May 13th, 1827.

Colour of the *dorsal aspect* greyish-brown, approaching to yellowish-grey *; *quill feathers* clove-brown, with faded exterior margins; *tail* blackish-brown. *Under surface.*—The belly, vent, and under tail coverts have a deep buff-orange colour, approaching to ferruginous, which on the breast and throat gradually passes into yellowish-grey and smoke-grey. The linings of the *wings* have an ochrey tinge. The *bill* is blackish-brown, its under mandible being rather paler. *Legs* black.

Form, &c.—*Bill* much smaller than that of *Tyrannus intrepidus*, but formed nearly upon the same model; its base, however, is not so broad in proportion, while its exterior half is somewhat depressed. *Nostrils* small, rounded, and partially concealed by bristles and feathers that project from the forehead. There are about five strong bristles at the angle of the mouth. The tips of the folded *wings* are half an inch shorter than the end of the tail. The quill feathers are rather narrow, but without any emargination of their inner webs. The first is of intermediate length between the fifth and sixth; the second and third are equal, and longest; the fourth is just perceptibly shorter. *Tail* moderately long and perfectly square. *Hallux* one third shorter than the tarsi. The *toe* and *claw* of equal length; and the latter much longer than the claw of the middle toe †.

Dimensions

Of the specimen, ascertained when it was recently killed.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of			Length of the bill, measured on its ridge	0	6½
the tail	8	0	,, of the tarsus	0	9½
,, of the tail	3	3	,, of the middle toe	0	6
,, of the longest quill feather	3	5	,, of its claw	0	3
,, of the folded wing	4	2	,, of the hind claw	0	3½
,, of the bill from the angle of the mouth	0	10½			

A *female*, killed on the 19th of May, differs from the preceding merely in being about half an inch shorter, and in the quill and tail feathers being rather paler.

* Cinnamon-brown.—Bonaparte.

† All the claws are peculiarly sharp and fully curved, ending in so fine a point, as to betray the habits of the bird to be strictly arborial. The scutellation of the *tarsi* is peculiar, and different from most other species. The hinder parts of the tarsi are protected by a row of small scales independent of those which wrap round the fore part, and which, in the generality of the *Tyranninæ*, meet behind, without the intervention of any other scales.—Sw.

[34.] 2. Tyrannula pusilla. (Swainson.) *Little Tyrant Fly-catcher.*

Genus. Tyrannula. Swainson.

Ch. Sp. Tyrannula pusilla, *super olivacea subter pallidior, fronte orbitisque canescentibus, alis sub-rotundatis: remige sextâ primam et quartâ secundam superanti, rostro brevi lato; mandibulâ inferiori pallidâ.*

Sp. Ch. Little Tyrant Fly-catcher, size small; plumage above olive, beneath paler; orbits and front hoary; wings somewhat rounded; first quill shorter than the sixth, second shorter than the fourth; bill short, broad; under mandible pale.

We have already called the attention of ornithologists to the fact of there being, in America, four or five small Fly-catchers, clothed in precisely the same coloured plumage, but differing essentially in the size and form of their bills, wings, &c. Now, as the older ornithologists, deceived by this similarity of plumage, neglected to record those distinctions which really constituted the specific characters, it becomes utterly impossible either to make use of their names or their synonymes. The terms in which such birds as *Muscicapa fusca, atra, phebe, carolinensis, virens, obscurus, acadica*, &c., have been described, are nearly applicable to one and all of these species (if such they be), no less than to four or five more, from different parts of America, now in our museum. The task of clearly ascertaining any one of these from books would, in short, be as hopeless as to attempt identifying the birds of Mexico or of Brazil by the obsolete descriptions of Hernandez or Margrave. For this reason, we consider it essential to the clear elucidation of these birds, that the above names be expunged from our systems, and that the three species so fully investigated and so accurately defined by Wilson should be consecrated by the names imposed on them by that most accurate observer of nature. These are the *M. rapax, querula*, and *nunciola* of the American Ornithology; and these names we shall hereafter quote, without any reference to the confusion and misapplication of them by other writers.

The *Tyrannula pusilla*, in all probability, has been confounded with the *querula* of Wilson, to which, as it bears the closest resemblance, we shall now compare it. Its colours are the same; but it is a smaller bird, particularly in the bill, which is rather broader towards the middle, although formed nearly on the same model: the under mandible is also pale. The chief distinction, however, is in the wings: those of *querula* being lengthened and rather pointed, the first quill equal to the fifth, and the fourth *shorter* than the second; whereas in *pusilla* the wings are

much shorter, and somewhat rounded, the first quill shorter than the *sixth*, and the fourth manifestly *longer* than the second. In the former, the second and third quills are longest; in the latter, the third and fourth. Before we had investigated the natural affinities of the Fly-catchers, we described this bird as possibly belonging to the genus *Platyrhynchus*. This, however, is not correct; nor has it any real affinity to that group. A fine specimen, in our collection, from the shores of Mexico, agrees with that brought home by the Expedition. On comparing these with twelve examples of *T. querula*, of all ages, killed this year in the vicinity of Philadelphia, we find the superior length of the wings, in *querula*, an invariable character; they measure, when closed, exactly three inches, the primaries being almost an inch longer than the secondaries. In *pusilla* the length is only $2\frac{6}{10}$ inch., and the primaries but $\frac{6}{10}$ longer than the secondaries. The colour of the plumage in both is precisely similar.—Sw.

Little is known respecting the habits of this bird. It was first seen by us at Carlton House, on the 19th of May, flitting about for a few days among low bushes on the banks of the river, after which it retired to the moist, shady woods lying farther north.

DESCRIPTION

Of a specimen, killed at Carlton House, lat. 53° N., May, 1827.

Colour of the head, neck, back, lesser wing and tail coverts intermediate between oil-green and hair-brown. There is a pale-whitish ring round the eye, which colour also encircles the front. The *quill feathers*, their greater coverts, a row of the lesser coverts, and the tail, are pale olive-brown; the exterior margins and ends of the secondaries being whitish, and there being two narrow greyish-white bands across the wing, one on the tips of the greater secondary coverts, and one on the lower row of lesser coverts. The *tail* is entirely without spots, the exterior web of the outer feathers being merely a little paler. *Under plumage.*—The throat and breast are pale ash-grey; the belly, under tail coverts, and linings of the wings pale sulphur-yellow, approaching to siskin-green. On the flanks the yellow is intermixed with dark-grey. The *upper mandible* is dark umber-brown, the under one yellowish-brown, with a resinous lustre. *Legs* blackish-brown.

Form.—*Bill* considerably depressed, the sides somewhat convex, but meeting in an evident ridge. Its breadth at the base is about two-thirds of the length of its ridge. The *rictus* is strongly bristled. The *nostrils* are small, roundish, and nearly concealed. The *wings*, when folded, fall three-quarters of an inch short of the end of the tail, and reach to scarcely one-half its length. The third and fourth quill feathers are the longest; the second nearly equals them; the fifth is a line shorter; and the sixth is two lines and a half shorter than the fourth; the first is intermediate between the sixth and seventh, and the others diminish in succession, so that the tenth and the secondaries are seven or eight lines shorter than the fourth. The *tail*

is very slightly emarginate; all the feathers being equal, except the central pair, which are not above a line shorter. Hind *claw* shorter and less curved than in *T. querula* *, and but a little larger than the middle one.

DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	5	0	Length of the bill, measured on the ridge	0	4½
,, of the tail	2	0	,, of the tarsus	0	7
,, of the longest quill feather	2	0	,, of the middle toe	0	4
,, of the folded wing	2	4½	,, of its claw	0	2
,, of the bill, from the angle of the mouth	0	5½	,, of the hind toe	0	2
			,, of the hind claw	0	2¼

[35.] 3. TYRANNULA RICHARDSONII. (Swainson.) *The Short-legged Pewit.*

GENUS. Tyrannula. SWAINSON.

CH. SP. TYRANNULA RICHARDSONII, *olivaceo-brunnescenti subtus pallidior, cristâ densâ incumbenti, rostro nigro, remige secundâ quintam æquanti, tertiâ et quartâ quoque æqualibus et reliquas superantibus, caudâ leviter forficatâ, tarsis brevissimis.*

SP. CH. The SHORT-LEGGED PEWIT, olive-brown above, pale beneath; head with a thick incumbent crest; bill black; the second and fifth quills equal, the third and fourth equal and longest; tail slightly forked; tarsi very short.—Sw.

The possession of several specimens of the three small *Tyrannulæ* described by Wilson, viz.—*rapax, querula,* and *nunciola,* killed this spring in the vicinity of Philadelphia, induces us to believe that this species, as well as the last, are new additions to the American Fauna; for such we must consider every bird whose specific distinctions have not been pointed out. The present species appears, from the skin, to be nearly of the same size as the *nunciola* of Wilson, which, in respect to colour, it so closely resembles, that it may possibly on that account have been

* The following are the dimensions of a specimen of the *Muscicapa querula,* WILS. (*Tyrannula Acadica,* SWAINS.) killed this season in the neighbourhood of Philadelphia:—

	Inches.	Lines.
Total length	5	3
Length of the tail	2	3
,, of the longest quill feather	2	10
,, of the bill on its ridge	0	5¼
,, of the tarsus	0	7½

PYRANGULA.

PUSILLA & RICHARDSONII.

London Printed for Jno. Murray, Fleet Street, as the Act directs, 1st Jan.y 1831.

mistaken for the Pewee. A glance, however, at their bills at once shews a material difference: that of *nunciola* being more elevated and compressed, the ridge on the upper mandible more distinct, and the sides less dilated; while the feet in *T. Richardsonii* are not only much smaller, but do not exceed in size or length those of Wilson's *querula*. The incumbent crest on the head of our bird is particularly thick and lengthened, more so, indeed, than in any of its congeners; its upper plumage, when compared with *nunciola*, is more olive, the whitish margins of the lesser quills more obscure, and the under plumage of a more olive-whitish tint; the frontal setaceous feathers are also longer: but all these are secondary characters, which, had they not been supported by a difference of organization in the two species, would not have authorised their separation. We may, however, add, that the tail of *Richardsonii* is more forked. The paler margin of the exterior tail feather is not a peculiar distinction of *nunciola*, for it is found in this and several other of these obscure-coloured American Fly-catchers. In the arrangement of the quill feathers, however, our bird exhibits another strong point of distinction: the third and fourth quills are equal and longest; but in *nunciola* this character belongs to the second and third, the latter quill being alone the longest; in *this* the second and fifth quills are equal, in *that* the fifth is two-tenths of an inch shorter. Our *Tyrannula barbirostris* makes the nearest approach, in the peculiar tint of its upper plumage, and its thick incumbent crest, to this species, of any we are acquainted with; but it is a very distinct bird. It is manifestly impossible to ascertain what are the species intended to be characterized by M. Vieillot under the names of *M. fusca*, *Todus obscurus*, *M. acadica*, and *querula;* they are obviously distinct, as Bonaparte observes, from such species as were known to Wilson, and had better be consigned to oblivion, unless they are re-described with greater accuracy.—Sw.

This new species was found in the neighbourhood of Cumberland House, frequenting moist, shady woods by the banks of rivers and lakes. It probably extends its summer range to the shores of Great Slave Lake; but much more accurate observations than we had in our power to make are required to ascertain the exact geographical limits of a bird so nearly resembling other species.—R.

DESCRIPTION

Of a specimen, killed at Cumberland House, June, 1827.

Colour of the dorsal aspect hair-brown, very slightly tinged with olive-green, much darker on the head than elsewhere. *Wings* and *tail* liver-brown; the margins of the secondaries and their coverts, and the outer edges of the exterior tail feathers, paler, as if worn. The *under*

plumage is of a pale colour intermediate between oil-green and wax-yellow, the under tail coverts approaching to ochre-yellow. *Bill* blackish-brown. *Legs* black.

Form, &c.—*Bill* depressed, broad, its breadth at the forehead being rather more than half its length; its sides are slightly convex, and meet in a straight ridge, which is terminated by a small hooked tip. The *nostrils* are partly concealed by feathers and bristles, and there are four or five stiff bristles projecting from the angles of the mouth. The tips of the *wings*, when folded, are more than an inch short of the end of the tail, and barely reach to half its length. The third and fourth quill feathers are the longest, the second and fifth are equal to each other, and slightly shorter than these; the sixth is a quarter of an inch shorter than the fourth, and the first is intermediate in length between the sixth and seventh. The *tail* is distinctly forked, the exterior feather being a quarter of an inch longer than the middle ones.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	6	8	Length of the bill, measured on its ridge	0	6
,, of the tail	2	9	,, of the middle toe	0	$5\frac{1}{4}$
,, of the longest quill feather	2	11	,, of its claw	0	$2\frac{1}{2}$
,, of the folded wing	3	3	,, of the hind toe	0	3
,, of the bill from the angle of the mouth	0	9	,, of the hind nail	0	3

—R.*

* The following differences in the colour of the plumage, which were detected by comparing a fine specimen of *Tyrannula nunciola*, killed in Pennsylvania, and now in Mr. Swainson's museum, with the new species, may be mentioned in addition to the specific distinctions noticed in the preceding page. In *T. nunciola* the upper aspect of the head is pitch-black; in *T. Richardsonii* it is very dark greyish-brown, without any approach to black. The dorsal plumage in both presents tints of hair-brown, but in the former the colour is a little clearer. The quill and tail feathers are blackish-brown in *T. nunciola*, and their shafts are black; in *T. Richardsonii* they are liver-brown, and the shafts are umber-brown. In *T. nunciola* the tips of the greater coverts are pale yellowish-grey, and the secondaries and tertiaries are rather broadly edged exteriorly with white; these parts in *T. Richardsonii* appear merely of a paler brown, as if faded or worn. The under plumage in *T. nunciola* is a clear primrose-yellow; whereas in *T. Richardsonii* it is straw or ochre-yellow posteriorly, and on the throat and sides of the breast is intermixed with much brownish-grey. We may add also, with regard to structure, that the most decided difference appears in the greater stoutness of the legs and feet of *T. nunciola*. The middle scales of the tarsus wrap round it with some degree of obliquity, there being no smaller scales interposed at the suture behind, except near the joints; whereas in *T. Richardsonii* the posterior part of the tarsus is covered throughout its whole length by an intervening row of smaller scales, and the anterior scales are transverse, not oblique.

Dimensions

Of *T. nunciola*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	3	8	Length of the bill to the angle of the mouth	0	$10\frac{1}{4}$
,, of the tail	3	0	,, of the tarsus	0	8
,, of the longest quill feather	3	0	,, of the middle toe	0	$4\frac{3}{4}$
,, of the folded wing	3	$4\frac{1}{8}$	,, of the middle nail	0	$2\frac{1}{2}$
,, of the bill on its ridge	0	7	,, of the hind toe	0	$3\frac{1}{4}$
			,, of the hind nail	0	3

MERULIDÆ.—*THRUSHES.*

The Thrushes, as we have already seen, constitute the second family of the *Dentirostres*. When viewed in reference to that particular formation of the bill from which the name of this tribe has been derived, the *Merulidæ* are clearly inferior to the *Laniadæ*. But if we regard the general perfection of their structure, we can be at no loss to discover in this family a decided superiority over the last. The feet are no longer so feebly or so partially constructed as to be specially adapted for any *one* purpose. In the true Shrikes and the Bush Shrikes, these members, although not of great strength, are nevertheless of a stronger make than in the aberrant group ; they are longer, more muscular, and apparently capable of much locomotion. This is particularly seen among the latter, where a feebleness of wing betrays an incapacity for much flight. But neither in these typical groups, much less in the short-legged *Edolianæ*, *Ceblepyrinæ*, or *Tyranninæ*, do we find more than one or two solitary examples of walking birds ; indeed, the finely-acute and well-curved claws, which is one of the great characteristics of the Shrikes, evinces a natural disqualification for such an office. The above exceptions are the genera *Prionops* and *Saurophagus*. These occupy aberrant stations, and evince the partiality of nature for making her transitions through ambulatory birds, even in a family so truly arborial as the *Laniadæ*.

But in the group we are now to investigate, the structure of the feet is altogether different. There is not only a considerable augmentation of muscular strength thrown into these members, but they are equally well adapted either for perching or walking, for constant use in moving among trees, or habitual exercise upon the ground. The Fieldfare, the Blackbird, and all the true Thrushes, are familiar examples of this typical perfection. Like the *Corvine* family, of which, in point of fact, they are the true representatives, these birds make their way upon the ground, in the air, or among trees, with equal facility. The Fieldfares and the Crows mutually assemble during the autumn in vast flocks, spread over our pastures, and traverse the ground in all directions, searching for nearly the same description of food. This perfection in the foot is more or less conspicuous throughout the whole of this family, and hence becomes one of its most typical characters.

In the form of the bill we likewise observe a superior adaptation for general purposes. The notch or emargination near the points of the mandibles is sufficiently strong to assist the Thrushes in gaining a firm hold of their food; but as their nourishment consists, for the most part, of soft substances, it is not developed into that formidable tooth which is seen in the Shrikes; while the superior length of the bill enables these birds not only to capture food that is exposed, but also such as is wholly or in part concealed just below the surface of the earth. The Shrikes, by the aid of their formidable tooth, tear their food in pieces, like the rapacious birds; while the Thrushes exhibit the last indication of such a habit, by beating their prey either upon the ground or upon a stone,—thus adopting the intermediate stage of preparation between devouring their *animal* nourishment by piecemeal, and swallowing it in an entire state. But the food of the Thrushes is not confined to insects: fruits of all kinds are equally acceptable; and thus they again imitate the *Conirostres* in deriving support both from the animal and the vegetable world *.

The third striking peculiarity which Nature has bestowed more particularly on the Thrushes is evinced in the sweetness, melody, and versatility of their voice, in which they may be said to surpass all other animals of the creation. The stillness of night, and perhaps more poetic associations, may give to the song of the Nightingale a greater charm; yet many will join us in awarding to the Song Thrush a higher meed of praise. Both these, however, must yield to the American Mocking-bird,—the Orpheus of the feathered race, to whose powers the poetic pen of a Wilson has done ample justice. Such are the most prominent characters of this family: its relations to the last remain to be stated.

The *Edolianæ*, or Drongo Shrikes, as formerly remarked, are conspicuous for a compressed bill, gradually arched from the base, where it is beset by rigid bristles of unusual length. The feet likewise are short; while the tail, although greatly forked in the typical species, is much less so in others, as, for instance, in the *Drongo Moustache* of Le Vaillant (*Ois. d'Afr.*, iv., pl. 169), where the bristles

* Mr. Selby, in his descriptive volume to the *Illustrations of British Ornithology*, gives the following interesting information on the food of the Song Thrush: "Insects and worms compose its food during summer, and the animal that inhabits the *Helix nemoralis* is also a favourite repast; for this purpose it breaks the shell by repeated strokes upon a stone; and numerous remains of these shells may be seen around particular selected stones, generally on some pathway or bare spot of earth, where these birds and their congeners abound."—i., p. 156. If simplicity of style, perspicuity of arrangement, intelligible nomenclature, and originality of information, are thought essential requisites to any work on British animals, Mr. Selby's volumes will be the standard authorities in this department of our Fauna. The price of the octavo edition, which includes the whole of the letter-press, places this essential part of his noble work within reach of the most humble student.—Sw.

are remarkably long*. Now the affinity which these Thrush-billed Shrikes bear to the genus *Trichophorus* did not escape the observation of M. Temminck, who first defined the latter; and which group he accordingly places immediately preceding *Edolinus*. The plumage, however, of the one being invariably black, and of the former as invariably green, the absolute connexion between the two could not be demonstrated until the discovery of some bird which united in itself a peculiar structure, joined to other characters belonging to both these forms. Such a bird we were fortunate in procuring from a most respectable dealer in Paris (M. Florence Prevost). The formation of its wing clearly points it out as a bird of the Old World, and it is labelled, "*Merle du Sénégal, non décrit.*" Its bill approaches to *Trichophorus*, (which is nearly that of *Edolius* upon a smaller scale,) and the whole plumage is entirely black. There is, however, a peculiarity in the tarsi which we cannot, at present, rightly comprehend, otherwise than by supposing that Nature passes from the *Edolianæ* to the Thrushes by means of a terrestrial bird, in the same manner as she effects a junction between the *Tyranninæ* and the true Fly-catchers, at the opposite passage out of the circle of the *Laniadæ*. In the *Merle de Sénégal*, the tarsi, without being longer, are more slender than those of *Edolius* or of *Trichophorus*, both of which, also, have the hind toe fully equal, or even longer than the middle toe; but, in our *Merle*, the middle toe, as in all birds which frequent the ground, is by far the longest; while the claws, in union with such a conformation, are rather slender and somewhat less curved. There is still, however, room for other intervening forms between *Edolius* and *Trichophorus;* for we do not consider this bird as demonstrating their union, although we are fully persuaded that the true passage from the Shrikes to the Thrushes lies between these two genera.

It will be the object of the following pages to demonstrate that the groups of the *Merulidæ* form three primary circles, composed of the following families† :—

* It is, no doubt, to an error or a fancy of the ignorant bird-stuffer who set up the specimen from which this figure was taken, that the bristles are represented as standing erect like horns! The vagaries which these people, particularly those of England, indulge in, deserve severe reprehension.

† In the system of Mr. Vigors the circle of *Merulidæ* is thus marked out: *Urotomus, Myothera, Pitta, Conopophaga, Cinclus, Chamæza, Merula, Sphecotheres, Oriolus, Cossypha, Timalia, Petrocincla.*

MERULIDÆ.

1. *Typical group.*	Bill gradually arched, slightly notched; wings adapted for perfect flight; tarsi moderate; toes disunited.	MERULINÆ.
2. *Sub-typical group.*	Bill abruptly bent, strongly notched; wings short, feeble; tarsi moderate; toes frequently united at the base.	MYOTHERINÆ.
3. *Aberrant group.*	Bill short, slightly notched or entire; wings rounded; tarsi short, or not adapted for walking.	BRACHYPODINÆ. ORIOLINÆ. CRATEROPODINÆ.

Our information on the natural economy of these groups is very defective, nor will the present state of knowledge admit of our illustrating the whole of their internal relations. We shall, therefore, briefly notice the leading peculiarities and minor divisions, without dwelling, more than the facts adduced may appear to justify, upon the natural series of the genera. We commence with the

BRACHYPODINÆ,

or Short-legged Thrushes, as being that sub-family to which the *Laniadæ*, by means of *Trichophorus*, are united. The peculiarities of these birds engaged our attention some years ago, and a more intimate acquaintance with the group has confirmed, to the fullest extent, the opinions we then held on their natural affinities. So closely are the genera *Trichophorus* and *Brachypus* united, that even in their typical examples they can only be distinguished by very accurate observers. This affinity, moreover, is confirmed in a very singular way. The intelligent ornithologist who, with much judgment, first characterized the genus *Trichophorus*, observes that *toutes sont des côtes occidentales d'Afrique;* and subsequent writers, adopting this belief, have never thought of examining into its correctness. The fact, however, appears to be, that typical examples of this genus occur in the Indian Isles, and have been described as *Turdi* by some authors, and by M. Temminck are comprised under his artificial genus *Turdoïdes*. Two *Trichophori*, one from Sumatra, the other (as labelled) from Java, are now before us; but to identify them with any of the described species of the Linnean genus *Turdus* has

been a fruitless effort*. In the typical examples of *Brachypus*, which appear to be such birds as *Brachypus dispar*, &c., the colours are very bright, while the plumage of another imitates that of an Oriole; close to these we place the Pitta-coloured birds, forming the sub-genus *Chloropsis*. The *Iöra* of Dr. Horsfield, with the *Importan* of Le Vaill. (*Ois. d'Af.*, pl. 106, f. ii.), and certain crested species from India, appears to complete the circle of the typical genus. The strait bill of *Iöra* prepares us for the genus *Micropus*, Sw.; by which, through *Phillastrephus*, Sw., and *Trichophorus*, Tem., Nature seems to reach *Icteria*, Vieil.; and thus to return to the typical genus *Brachypus*, Sw.

Such is probably a rude outline of the natural series of this division, which appears confined, like the *Edolianæ*, to the hot latitudes of the Old World. They have hitherto received so little attention, that the very existence of the group has never yet been suspected. The inimitable tact, however, possessed by Le Vaillant in the perception of affinities, induced him to place together all the African species he was acquainted with; and to his invaluable work on the birds of that continent we are indebted for some important information, which we shall allude to hereafter; at present it will be sufficient to state, that these birds live only among trees; that they are of social habits, evince a singular attachment to man, and are perpetually uttering a short, unvaried song. They apparently subsist entirely upon insects concealed among the branches. Without entering further into details, their whole conformation will be found in strict unison with these habits.

That the short-legged Thrushes are immediately followed by the

ORIOLINÆ,

there can be little doubt; for although the connection has never been perceived, and the passage is by no means indisputable, yet there are two remarkable birds, whose peculiar conformation exhibits a union of those prominent characters, which are alone found in these sub-families: nor do we believe that their station in Nature can be otherwise than as aberrant types of one or the other of these divisions. We allude to the *Grive de la Guyanne* of Buffon, and the Palm Thrush (*Turdus palmarum*) of authors†. The first has been placed, by some, with the Tanagers, and by others with the Thrushes; but with very little attention to the affinities of either one or the other. Even the distinguishing characters of this bird have been so completely overlooked, that, but for a reference to the old

* The *Turdus gularis* of Java (Linn. Trans., vol. xiii., p. 150) is a typical *Trichophorus*.—Sw.

† Le Palmiste de Cayenne, *Pl. Enl.* 539, f. i.

name, it would be impossible to divine in what manner the genus *Dulus* could possibly differ from a dozen other genera *. The only specimen of this rare bird we have yet seen, is in the Royal Museum at Paris. In its wings, feet, and the shortness of the bill, it agrees with the preceding division; but, like the Orioles, the rictus is perfectly smooth, the nostrils large, naked, oblique, and open, and the bill thick, much compressed, and strongly notched. This singular bird is said to live in societies, to construct its nest with great skill, and to have no song; in all which it resembles the birds of this division; while it seems to have borrowed the plumage of the female Orioles.

The Palm Thrush makes a still nearer approach to the typical *Orioles*. This approximation is so strongly manifested by the lengthened form of the bill, and the perfect accordance of structure in the nostrils, feet, wings, and tail, that no intervening form becomes necessary to establish the affinity. The rictus, indeed, is bristled, while that of the *Oriolus galbula* is smooth; but between these intervenes an undescribed Oriole from Sierra Leone, of which we possess two specimens, wherein this part is thickly set with setaceous hairs; the intermediate link is thus supplied. The Oriole Thrush †, like the true Orioles, is a restless, shy bird, constantly in motion among high and thick trees, without shewing a preference to any one sort. "*C'est un oiseau solitaire, qu'il est rare de rencontrer par couple; mais il est sans cesse en mouvement, voltigeant de branche en branche, afin de guéter les insectes, dont il fait sa nourriture ordinaire.*"—(*Sonnini.* Buff., x. 166.) Whether this bird, like the Oriole, builds a pendulous nest, has not been ascertained; but the above passage perfectly coincides with our own observations on the habits of *Oriolus galbula.*

The suspicions of Dr. Horsfield, on the possible affinity of his *Irena puella* with the Orioles, have been fully confirmed by our recent observations on this bird, which we were formerly compelled to speak of from the descriptions in books. Specimens of this elegant species we now possess; they have completely annulled our former idea, borrowed from M. Temminck, that *Irena* had some connection either with *Edolius* or *Thamnophilus*. The examination, also, of a most perfect and magnificent specimen of the Golden Bird of Paradise, now in the

* Esclave, *Dulus.*—Bec nu à la base, un peu robuste, convex en dessus, comprimé latéralement; mandibule supérieure un peu fléchie en arc, écanchrée vers le bout; l'inférieure droit. *Esp.* Tangara esclave. Buff. (*Analyse d'une Nouv. Orn. élémentaire,* 1816, (1815). This inability to define differences, of which the mind may, nevertheless, have a vague perception, is unpardonable in the maker of a system.

† We substitute this vernacular name for that of Palm Thrush, which M. Vieillot remarks is altogether inapplicable, the bird never being seen in palms. These trees, in fact, from our own observation, afford no shelter or shade for such birds as prefer, like this, to live in "broussailles touffues;" and they are completely destitute of insects.

Paris Museum, proves this to be a typical Oriole, differing in no respect from the other species, except by the prolongation of the feathers on the back, and hinder parts of the neck. Still less do the short-legged Orioles of New Holland (*Mimeta*, Vig.) merit even a sectional distinction. The *supposition* that they were meliphagous, and might, therefore, *possibly* form a good genus, has since proved fallacious. We owe to the zealous labours of Sir W. Jardine, Bart., and Mr. Selby, the recent delineation of the tongue; which, by a reference to our Italian drawings, we find exhibits a structure precisely similar to that of the European Oriole. But a discovery of much more importance is also due to the same able ornithologists. This regards the superb *Sericulus chrysocephalus*, Sw., one of the most beautiful birds in creation: this was pronounced by a naturalist, who lived in its native country, to be a Honeysucker, and consequently furnished with a filamentous tongue, similar to the other birds placed by him in the same group. The accuracy of this statement we ventured to question*; and we entered into many details on the structure of the feet of meliphagous birds in general†. Whether these latter remarks really possessed the novelty we conceived they did, is a matter hardly worth inquiring about; but that our views on the natural station of *Sericulus* were founded on true principles of comparison, is now placed beyond all doubt: a specimen of this species having been received in spirits, by Sir William, from New Holland; who now informs us, that the tongue has not the slightest indication of the meliphagous structure; that the bird is, in fact, an Oriole.

The question, therefore, of *Sericulus* belonging to this group, is now set at rest. The genus stands as a very distinct and important type; important, inasmuch as it presents the first indication of the next sub-family. Hitherto we have treated of groups strictly arboreal, an economy, indeed, manifestly apparent from the universal shortness of the feet, joined to the strength, broadness, and great curvature of the claws; the latter peculiarities being very conspicuous, even in *Iöra*, Horsf., the only form which presents us with a greater elongation of the tarsi: but, in *Sericulus*, this imperfect development of foot is no longer apparent; the tarsi are strong, and more elevated; and the toes are of that size and proportion always found in birds whose habits are both arboreal and terrestrial. With all these deviations from the typical structure of the *Oriolinæ*, the

* "On the characters and natural affinities of some new birds from Australia."—*Zool. Journal*, i., p. 463—484.

† In reference, apparently, to these observations, it has been said that "Mr. Lewin, in his Generic Description of Meliphaga, has *strongly pointed out* this character." (*Linn. Trans.*, xiv., p. 467.) This may doubtless be true, if *such* a character as the following is sufficient to explain the peculiar structure of the feet of meliphagous birds, and their adaptation to the economy of the family. Lewin's words are four, "Toes formed for climbing." (*Birds of New Holland*, pl. 5.) Is not this phrase equally applicable to a Cuckow, a Parrot, a Woodpecker, or to a dozen other families?

strength of the hind toe (conspicuous in this and the preceding sub-families) is still preserved; but the proportionate length of the middle toe is much increased. We are thus justified in believing that the natural group, which would next follow in affinity, must be one in which these members are greatly developed. A chasm, however, at present exists in our passage to the

CRATEROPODINÆ,

or Long-legged Thrushes, which we shall neither disguise, nor attempt to smooth over. Certain it is, that the birds we are now to dwell upon are placed by all naturalists with the Thrushes; that they exhibit peculiarities among themselves, which distinctly separate them as one of the leading divisions of the family; and that however unprepared we may be to establish their direct union with the *Oriolinæ*, still that their other affinities do not admit of our referring them to any other station. Many of the forms, indeed, have not escaped the nice discrimination of modern ornithologists; but as the existence of the group itself has never yet been even suspected, a few preliminary remarks on its typical distinctions appear necessary.

The birds composing this sub-family are at once distinguished by the great strength of their legs; these members being, in all their details, larger and more muscular than those of all other Thrushes. The claws, although strong, are slender, and but slightly curved; the wings, in comparison to the body, are very short, convex, and indicate great weakness of flight; the tail is lengthened, generally broad, but sometimes narrow; and the whole plumage peculiarly lax and soft; the feathers of the head are frequently intermixed with setaceous hairs, and others, of a much more rigid texture, appear to defend the eyes; the bill is variable in its length, and even in its general form, but, upon the whole, it may be characterized as having a peculiar hard and horny appearance, the sides always very much compressed, the culmen elevated and arched, and the tip either entire, or but slightly notched; the nostrils are protected by a hard convex membrane, similar to the gallinaceous tribe. In regard to size, it comprehends some of the smallest, and most of the largest, birds in the whole family, a circumstance of very easy explanation, when the true nature of the group is understood. Their habits and economy are singular. It appears that most of the typical species principally live in the vicinity of water, among reeds; their notes are particularly loud, harsh, and grating; and in these retreats they keep up a perpetual monotonous babbling: some, however, possess much more harmony; but nearly all

appear to frequent only low trees or shrubs. Their geographic range is almost limited to the warm latitudes of the Old World.

Birds answering to this description have been scattered in almost every group of the *Insessores*. It is therefore impossible, at present, to name the *most* typical genus. That to which we have given the name of *Crateropus* * appears to exhibit the above characters in great perfection, although the *Gracula striata*, of the Paris Museum, another very prominent type, may possibly hold this station : near to these we must place the genera *Megalurus*, *Pomatorhinus*, and *Timalia*, of Dr. Horsfield ; the *Dasiornis* † and *Phosphodes* of Mr. Vigors ; part of the *Maluri* of M. Temminck, together with the newly-characterized type, *Donocobius*, Swains.‡, this latter being the only representation of the group in South America.

Dissimilar as this sub-family undoubtedly is to the Orioles, there are not wanting forms in each, which, to us, evince a mutual approximation. *Sericulus* prepares us for the great change about to take place in the structure of the feet ; while we are in possession of a Long-legged Thrush, decidedly belonging to this sub-family, whose plumage, at least, immediately reminds us of the Orioles. Like those birds, also, the rictus is smooth, the nostrils completely naked, the bill lengthened, compressed, and slightly arched ; and, like the Orioles (as it is said), we know that *this* bird fabricates a most beautiful, long, pendulous nest §.

To pursue our observations on the minor forms of this sub-family, would be to theorize where we should analyze. It therefore only remains to show in what manner the aberrant circle is closed, by the union of this family with the *Brachypodinæ*. For this purpose, let the ornithologist examine the *Icteria polyglotta*, or the Yellow-breasted Chat of Wilson : he will there see a bird possessing nearly all the typical characters of the Long-legged Thrushes ; their short, compressed, arched, and entire bill ; their feeble rounded wings—their strong and lengthened tarsi—and their hairy crown. Let him read the extraordinary history, given by the American ornithologist, of this singular bird (vol. i., p. 90) ; let him then turn to the account of the African *Brachypus*, described by Le Vaillant, under the name of *Le Brunoir*, Ois. d'Af., iii., p. 39, and he will be disposed to think that either description might be applied to one or both birds.

But if we had entertained any latent doubts on this union, the recent proposal of

* Zoological Illustrations. New Series, No. 17, pl. 80.

† This name, as already intimated by Mr. Gray, must be rejected ; since the group had long before received the denomination of *Sphænura* from that learned zoologist and accomplished traveller, Professor Lichtenstein.

‡ Ib., N. S., No. 16, pl. 72.

§ A fine specimen, both of the bird and its nest, formerly in Bullock's Museum, is now in that of the Liverpool Institution. We have subsequently received two skins of this bird from Western Africa ; and another, in the Fort Pitt Museum of Chatham, was brought from the coast of Gambia.—Sw.

the genus *Ixos* by M. Temminck, and its adoption by Mr. Vigors, would have dissipated every scruple. We feel gratified, indeed, that these intelligent ornithologists have, *unknowingly*, admitted a peculiarity in natural arrangement, which, so far as this family, at least, is concerned, we might have felt it necessary to demonstrate, both by long quotations and much tedious detail. The genus *Ixos*, after long consideration on the part of its proposer, is at length made to embrace the greatest part of our *Brachypodinæ*, and nearly the whole of our *Cratopodinæ*. The characters by which we here distinguish the two groups, namely, the different construction of their tarsi, having been either overlooked, or viewed as of little importance by these gentlemen *. The truth, indeed, is, that this union is so close, and the links of connexion so perfect, that we are still undetermined whether to place *Icteria* among the *Brachypodinæ*, or at the utmost limits of the *Cratopodinæ*. For reasons, however, too long, and perhaps too tedious to be given in this place, we adopt the first; since we suspect the existence of a form, among the *Crateropodinæ*, still more perfectly uniting the two sub-families.

Upon a review, therefore, of the preceding observations on the three aberrant groups of the *Merulidæ*, we consider that there is sufficient evidence to believe they follow each other in the series here stated, and that they constitute one primary circle; at the same time, it must be remembered, that our knowledge on their internal arrangement is singularly imperfect; so much so, that we cannot, as yet, separate the genera from the sub-genera, or even, in some instances, point out with precision the pre-eminent types. We must now return to the *Brachypodinæ;* and, bearing in remembrance their aberrant forms, let us see in what manner they are connected to the sub-typical circle of

MYOTHERINÆ,

or Ant Thrushes. We have already seen that *Trichophorus* occupies an aberrant station in its own sub-family. There was an interesting lot of skins from Sierra Leone, almost entirely consisting of these birds, which were purchased by us at Bullock's auction, and part of which we transferred to M. Temminck. Among those which remained was one bird, which had long stood in our collection as a *Trichophorus;* its plumage is the same as the generality of the species; being olive-green above, and yellowish beneath; while the tail, like several *Trichophori*

* This genus, after all, cannot be adopted; at least, in any system professing to follow natural affinities; for, independent of the above mixture, it embraces forms belonging to two other families, namely, the *Laniadæ* and the *Sylviadæ*. It is, in short, one of the most vague and artificial groups that can well be imagined.—Sw.

mentioned by M. Temminck, is strongly tinged with that rufous colour so common among the scansorial creepers. The bristles of the rictus are as fully developed as in the most typical *Trichophori*, but those on the neck are shorter; the bill, equally compressed, is nevertheless much longer, and assumes the straighter form seen in *Myothera*, Ill.; the tip being rather abruptly bent, and the *gonys* likewise ascends. The feet did not at first appear to offer any particular character, otherwise than in being of a pale colour, and rather lengthened; but, upon carefully relaxing these parts in warm water, we were filled with delight at discovering they were completely syndactile! the first and second joint of the outer toe being united to those of the middle toe. The form, which for near four years we had been searching for in other museums, was thus brought to light in our own; and the value of the discovery became at once apparent, by revealing a solitary but indisputable link between the *Brachypodinæ* and the *Myotherinæ*.

The first form which we meet with on entering this sub-family may, therefore, be expected to have a very close resemblance to that we have just described; and we accordingly find, in the genus *Dasycephala**, Swains., this affinity carried to a very great length. The type of this genus† has long been placed with the Tyrant Flycatchers, and its analogy to those birds is so strong, that we ourselves fell into the same mistake when, some years ago, we drew up a monograph of that group. The syndactile feet of the bird above described are still apparent in *Dasycephala*, although this structure is less developed in some species than in others; the nuchal hairs disappear, the bristles of the rictus are much shorter, but the whole fore-part of the head is defended by stiff, short, bristly feathers; the tarsi are much longer, and of a structure we should naturally expect to meet with, upon entering a group of ambulating birds. There must be some highly interesting point in the economy of *Dasycephala*, connected with the singular manner in which Nature has defended the front of the head (a prominent character in four species which we have seen), of which we are at present ignorant; and, under this supposition, we are induced to place the *Pipra albifrons* of Linnæus, a form evidently belonging to the *Myotherinæ*, close to *Dasycephala*; the forepart of the head and throat are protected much in the same way; not, indeed, by bristles, but by stiff feathers. A passage is thus opened to the genus *Myothera*, so direct

* We leave this passage as it originally stood when sent to the printer; but we have since had the unexpected good fortune to meet with the scansorial type of the *Brachypodinæ*; an African bird, uniting (in conjunction with that described above) *Micropus* and *Tricophorus*, in their own circle, and demonstrating the absolute passage to *Dasycephala*. To the liberality of our friends, Sir W. Jardine, Bart., and Mr. Selby, we are indebted for a knowledge of a second species, sent, with numerous other African birds, for our inspection and use. This genus we have denominated *Phyllastrephus*.—Sw.

† *Muscicapa cinerea*, Spix., *Avium Sp. Nov.*, pl. 26, f. ii.

and natural, that no one will feel inclined to dispute the affinity. In addition to the subgenera formerly alluded to, as comprised under the general characters assigned by Illiger to the Ant Thrushes, we feel no hesitation in adding *Brachypterix*, Horsf., forming part of the *Sylviadæ* of Mr. Vigors, but which, in truth, is, to all appearance, the oriental representative of our sub-genus *Drymophila**. The surprising number and variety of these birds in the tropical regions of America, will render the discovery of their circular affinities, *among themselves*, by no means difficult to future ornithologists; but, at present, we are neither acquainted with the true typical structure, nor with that by which Nature effects a union between *Myothera* and *Pitta*, a group which we place, without hesitation, in immediate conjunction with the American Ant Thrushes. The shrike-like bill of these latter birds, abruptly hooked, and often nearly toothed, is now exchanged for that form which belongs to the true Thrushes; this member being compressed, gradually curved nearly from the base, without either a sudden deflection at the end, or a notch, sufficiently deep, to produce a prominent tooth-shaped angle on the upper mandible. The typical species are well known, as being some of the most beautiful birds of India; but there are others, recently arranged with little judgment or discrimination, in the same genus with *Ptilonorhynchus* of Kuhl, (under the intolerable name of *Kitta*), which appear to us so intimately connected with this group, as scarcely to merit a sub-generic distinction. The characters of the sub-genus *Grallaria*, Vieil., are built upon much better distinctions: in this South American bird we have the representation of the oriental *Pittæ* in the New World: and another step is made towards the true Thrushes, by the plumage assuming their brown and spotted colouring. Intervening between these, however, we may place the sub-genus *Chamæza*, Vig., having the scutellation of the tarsi of *Pitta*, with the spotted plumage of *Grallaria;* the lateral scales of this last being entire, like those of the Thrushes.

There remains another form, belonging to Oriental India, which seems of pri-

* Much confusion has lately been introduced in the application of this name (originally used by us to designate one of the minor groups of this genus), for which we are obliged to censure the authors of the *Planches Coloriées*. Indeed, it is really surprising to witness the little information which these gentlemen appear to possess on the state of ornithological science in England, or with the great accession of new species which crowd the pages of our scientific publications. Unacquainted even with the contents of the later volumes of the Linnæan Society's Transactions, these authors have recently affixed the generic name of *Drymophila* to the group of Flycatchers, there previously denominated *Monarcha;* while they seem perfectly unconscious that the former name (*Drymophila*) had already been employed, nearly six years ago, to designate one of the groups of American Ant Thrushes. Numerous other instances, particularly of Mexican birds, familiar to our cabinets by names and descriptions of several years standing, but which are now publishing by these gentlemen as *new discoveries*, attest the little acquaintance they have yet made with our scientific works, and strikingly illustrates the inextricable confusion which now reigns throughout every part of ornithological nomenclature.—Sw.

mary importance, as constituting the fourth type of this sub-family. We allude to the genus *Myophonus* of M. Temminck, supposed by that gentleman to consist of but one species, but to which his *Pitta glaucina*, Pl. Col., strictly belongs. We are further acquainted with two others, unquestionably appertaining to the same natural group. These birds, exhibiting many points of close affinity to *Pitta*, are at once distinguished by the more sudden inflection of their bill; while they are still further separated from *Myothera* by a great dissimilarity of habit, and by the notch of both mandibles being nearly obsolete; the relative size of this member, from which so many erroneous notions on natural groups have originated, is a circumstance of little or no importance; while the close resemblance of the aberrant *Myophoni* to certain Rock Thrushes, appears to indicate the true passage from the *Myotherinæ* to the next sub-family.

The last and the most extraordinary form, which we consider belongs to this division, is represented by *Cinclus*. This genus in all systems, whether confessedly artificial, or professedly natural, stands, as it were, isolated. There cannot, however, be much doubt that it enters among the *Myotherinæ*: the question, therefore, is, whether *Cinclus* is sufficiently related to *Myothera*, to justify our viewing it, for the present, as one of the types of that genus; or whether its peculiarities are not sufficiently strong to induce the belief that it occupies a higher station; in other words, may it not be one of the primary forms in this sub-family? Our present opinion is in favour of this latter view; and although the affinity between *Cinclus* and *Myophonus*, on the one hand, and *Dasycephala* on the other, is by no means satisfactory, still it must be remembered that there is nothing, in the external anatomy of this genus, which at all militates against its holding this intermediate station.

It is in some such manner as this, that we believe Nature has disposed the leading types of the Ant-Thrushes. From *Dasycephala* to *Myophonus*, through the genera *Myothera* and *Pitta*, we consider the chain of affinity as nearly perfect; but indications only of such annectant forms as are to complete the circle, are as yet known. Much, therefore, remains for discovery. A sufficient number of genera and sub-genera have been proposed to make us acquainted with *species*. This, in short, is the only use of such divisions, when not viewed with reference to their actual affinities. The circular succession, and the subordinate types, both of *Myothera* and *Pitta*, more particularly calls for investigation; and their development is a fit subject for naturalists of the highest talent: let us hope this may be done; for upon it will depend much more accurate ideas on the true relations of *Cinclus*, than any which we now entertain.

The first group we are to notice in the sub-family of the

MERULINÆ,

or True Thrushes, is composed of such as frequent rocks, or stony ground; having rounded wings, lengthened tarsi, and feet more adapted for walking than for perching: such birds, in short, as appear to enter in the genus *Petrocincla*, Vig. Between these and the Song Thrushes the affinity is too marked, and too close, to require pointing out. The genus *Merula* comprehends the Blackbird, Throstle, and the whole of the European Thrushes; and numerous species of this typical group are found in every temperate and tropical region, both of the Old and New World. The genus *Orpheus*, Sw., has a more limited range; no examples occur in Europe; and such as exhibit the typical structure are all from America. If we regard the uncommon powers of song possessed by the Mocking-Birds, as sufficient to confer upon them the typical distinctions of this family, the genus *Orpheus* will hold that station. But if we consider that a more perfect organization for all other purposes, should guide us in this decision, then the title must be conferred upon *Merula;* in either case the peculiarities of the two groups point them out as the leading types of the whole family. We have not yet satisfied ourselves on the precise nature of the two remaining types of this division, and shall therefore forbear hazarding any opinion. That the *Merulinæ* unite with the Long-legged Thrushes, we can, however, entertain no doubt. The *Orpheus rufus* of North America exhibits, like these latter birds, a perfectly entire bill, strong feet, short wings, and lengthened tail; and when such an ornithologist as M. Temminck describes our *Orpheus longirostris* (which, in fact, is the Mocking-Bird of Mexico) as a decided *Pomatorhinus*, the absence of the intermediate forms will not, in our opinion, materially affect the accuracy of our arrangement.

The appearances of Nature, nevertheless, are so deceptive, that the oldest and most experienced of her students are perpetually mistaking her relations; and if we were to proceed only by the synthetic method, or even by simple analysis, we may be deceived into combinations the most artificial that can well be imagined. Hence it is fortunate that every arrangement, thought to be natural, peremptorily requires being brought to the test of *analogical relations;* and these, as we before observed, are so many, and so severe, that if our interpretation of Nature will stand such trials, we may confidently hope that no very glaring error has been committed. For this purpose, let us first look to the five great orders of birds as the primary test by which we must try the

ANALOGIES OF THE MERULIDÆ.

Orders.	Analogies.	Families.
Insessores	. Feet formed both for perching and walking: omnivorous .	. *Merulinæ.*
Raptores .	. Bill with a prominent tooth, & abruptly hooked: insectivorous .	*Myotherinæ.*
Natatores	. Feet remarkably short	. *Brachypodinæ.*
Grallatores.	Wings long, pointed; tail short: feed on soft substances .	. *Oriolinæ.*
Rasores .	. Bill horny, hard, generally entire; feet very strong .	. *Crateropodinæ.*

The analogies in the two first columns are sufficiently evident: the third also is satisfactory; the fourth is somewhat obscure; but the fifth is so particularly beautiful, that it deserves further illustration. The short convex wings; the broad, spreading tail; great difficulty in flight; a size superior to all others in their respective circles, are the typical distinctions of these two groups; even the nostrils are formed upon the same principle; the membrane, by which the aperture is defended, and which in other birds is soft and pliable, in these assumes the appearance of a hard scale, as if covered by a prolongation of the horny substance of the beak. The loud, harsh, and disagreeable notes of both groups is another singular point of resemblance, which almost completes the picture.

We next proceed to compare our groups with those of the tribes of *Insessores.*

Conirostres .	Wings lengthened; bill gradually arched, slightly notched. *Merulinæ.*
Dentirostres.	Bill abruptly hooked, with a prominent tooth . . . . . *Myotherinæ.*
Fissirostres .	Feet very short; rictus bristled: insectivorous. . . . . *Brachypodinæ.*
Tenuirostres.	Feet short; rictus smooth: nectarivorous or frugivorous *Oriolinæ.*
Scansores . .	Claws acute, formed for clinging to vegetables . . . . *Crateropodinæ.*

The analogies of the Orioles, scarcely perceptible when viewed in direct reference to the *Grallatores,* now become more satisfactory. These birds, with the whole of the *Tenuirostres,* are remarkable for the soft and delicate nature of their food; and both, in unison with such habits, have the *rictus* entirely smooth. The *Tenuirostres* sip the nectar of flowers; the *Oriolinæ* feed upon the fruits. The reader may have remarked, that some peculiar habits of the *Crateropodinæ* could not be explained by their analogy to the *Rasores;* the latter living in plains, and seldom perching, whereas the former are scarcely ever seen upon the ground;—but this is at once explained by their relation to the *Scansores;* both groups being, in different degrees, scansorial, and living on the upright stems of vegetables.

We have before stated our conviction that the *Merulidæ* and the *Laniadæ* are the two typical groups of the *Dentirostres*. To shew that there is good ground for this belief, we shall now state the general analogies between the leading groups of these families.

Fam. LANIADÆ.		Fam. MERULIDÆ.
Lanianæ . .	Bill gradually arched; wings pointed.	*Merulinæ.*
Thamnopholinæ	Bill straight, abruptly hooked; wings rounded. . . .	*Myotherinæ.*
Edolianæ . .	Feet short; hind toe lengthened	*Brachypodinæ.*
Ceblepyrinæ. .	Rictus smooth; rump feathers thick, spinous, or rigid.	*Oriolinæ.*
Tyranninæ . .	Tail broad; rictus bristled: insectivorous.	*Crateropodinæ.*

The last analogy is so obscure, that we for some time questioned the accuracy of the whole arrangement. Subsequently, however, we invariably observed, upon trying to discover the analogies between typical circles, that at such *points* as are most remote, the *resemblances* are also most remote. A moment's reflection will shew that this cannot be otherwise. The *Tyranninæ*, for instance, and the *Crateropodinæ* stand at the utmost limits of their own circles; and, necessarily partaking of many of those characters which belong to groups *beyond* those circles, it is only surprising that nature preserves any resemblance between them. The analogy which the Orioles bear to the Caterpillar-catchers is not only strong, but particularly beautiful. In both groups the structure of the wing is the same; so also are the feathers on the rump; but those of *Oriolus*, and of *Irena*, Horsf., from being less strong, offer little or no resistance. These, in fact, are the only groups in their respective circles where the *rictus* is broad, wide, and smooth; the one living chiefly upon soft caterpillars, the other upon soft fruits. To dwell upon the resemblance of the Short-legged Thrushes to the *Edolianæ* is needless, since they are united by absolute affinity; while the general analogies between the Bush Shrikes and Ant-Thrushes have already engaged our attention, and will presently be viewed more in detail. It only remains, therefore, to establish the analogy between the true Shrikes and the *Merulina* or typical Thrushes,—these groups standing opposite to each other in the foregoing table. As it is highly important to our present views that this relation should be established beyond all doubt, and by the unbiassed testimony of others, totally unconscious of the use that would subsequently be made of their observations, we have brought together the most striking peculiarities of two birds, which may be considered the types of their respective families; namely, the *Lanius Carolinensis* of authors, and the common

Mock-bird of North America. The words in Italics alone denote their respective differences.

Lanius Carolinensis, *Wilson.*	American Mocking-bird.
Bill arched from the base, *short;* rictus bearded.	Bill arched from the base, *long;* rictus bearded.
Colour above grey, beneath white; *ears black;* wings obliquely rounded, black,—the quills with a white band at their base; tail black, graduated, tipped with white.	Colour above grey, beneath white; wings obliquely rounded: wings and tail of the same structure and colour as those of Lanius Carolinensis.
"Makes its nest in a detached bush, in the manner of the Mocking-bird." Wilson, iii., p. 57.	
"Feeds on crickets and grasshoppers." p. 57.	"Feeds on winged insects, *fruits,* and grasshoppers." Wilson.
The Cinereous and Red-backed Shrikes imitate the notes of other birds. Lath., *Gen. Hist.*, ii., p. 12.	Imitates the notes of other birds.
Shrikes and rapacious birds are well known to disgorge the undigested part of their food in round pellets.	Mr. Bartram writes, "I have observed that the Mocking-bird ejects from his stomach, through his mouth, the hard kernels of berries, &c., retaining the pulpy part." Wilson, ii., p. 25.
In Georgia, according to Mr. Abbot, the Carolina Shrike is known by the name of Big-headed Mocking-bird. Lath., *Gen. Hist.*, ii., p. 7.	

It seems impossible to conceive in what way this most extraordinary analogy can be rendered more complete. Here are typical examples of two groups—birds of the same size—clothed in nearly the same coloured plumage, seeking the same kind of nourishment, agreeing in the structure of their wings and tail, (almost in their feet,) building the same kind of nest, imitating the notes of other birds, ejecting their unserviceable food in the same manner, and, finally, called almost by the same name,—and yet totally distinct in real affinity! Well may we exclaim, "Wonderful are thy works, O Lord! for they are full of wisdom." If such astonishing relations become apparent on gaining the first imperfect glimpse of His system, how inconceivably sublime must be the whole, could the human mind ever attain unto such knowledge!

One simple fact we can add from our personal observation, which may not be here misplaced. Of the genus *Orpheus*, to which the Mock-bird of North America belongs, we discovered four species in Brazil. One of these (its name in the systems we really cannot make out) particularly struck us, at first sight, as being a Shrike; like those birds, it sits on pales or stakes, watching for its prey, and darting upon such grasshoppers or other terrestrial insects as come sufficiently near it; it then returns to its former station. These habits we have repeatedly witnessed in the common *Lanius collurio*. At that time we thought the former circumstance hardly worth noticing, and omitted to observe in what manner the bird devoured its food.

We have before adverted to the singular property belonging to natural groups, of furnishing more than one set of general analogies. To illustrate this position further, we shall now lay before the reader another view that may be taken of the *Merulidæ*, leaving it to his own judgment to decide which, as exhibiting the most perfect harmony, is entitled to the greatest degree of confidence.

It may be remembered that we have contemplated the Drongo Shrikes as analogous to the *Rasores*, and consequently to the *Scansores*. Now as it is by this division that the *Laniadæ* are connected to the *Merulidæ*, by means of the *Brachypodinæ*, into which they insensibly blend,—is it not, it may be asked, contradictory to suppose that two sub-families so intimately united should represent two different orders? For it would seem to follow, that if the *Edolianæ* are the true representations of the *Scansores*, then the group in the *Merulidæ* which most resembles them should bear the same relation. Both the *Edolianæ* and the *Brachypodinæ* have the feet remarkably short; in both the *rictus* is furnished with strong bristles, and in both the hind toe, as in all scansorial birds, is particularly long. These characters, if they are of any value in shewing the true analogies of one group, must be equally so in another: hence it may be concluded, that the *Brachypodinæ* represent the *Scansores*, rather than the *Fissirostres* or the *Natatores*. It may be further urged, that however conclusive the analogy between the *Crateropodinæ* and the *Rasores* may appear, still that there is one strong peculiarity in the habit of the former, which cannot be explained either by their supposed analogy to the *Rasores*, or to the *Scansores;* this lies in the partiality evinced by all those species whose habits are known, of living in the vicinity of water. Now this can only be accounted for on the supposition that the *Crateropodinæ* represent the *Natatores*. Presuming, therefore, on the strength of these two relations, we proceed to arrange the analogies of the *Merulidæ* in the following manner:—

Raptores	Dentirostres	*Merulinæ.*
Insessores	Conirostres	*Myotherinæ.*
Rasores	Scansores	*Brachypodinæ.*
Grallatores	Tenuirostres	*Oriolinæ.*
Natatores	Fissirostres	*Crateropodinæ.*

It will be immediately perceived that the *Oriolinæ* alone preserve the same relations in this and in the former table; all the others being, as it were, reversed, although each column exhibits the same natural and circular series. The relations already stated, which may be supposed to exist between the groups placed in the three last lines, are here brought immediately under the eye; and, however strong they may appear in some points, they are decidedly weak in others. The *Brachypodinæ*, for instance, by their very short feet and the great development of the hind toe, may be likened to the *Scansores;* but we have failed in detecting any *direct* analogy they may have with the *Rasores*. The *Crateropodinæ*, again, appear to be the only division of the *Merulidæ* which habitually frequent watery places, and so far they may be likened to the natatorial order; but to the *Fissirostres* they seem not to have the remotest analogy. Still more difficult is it to conceive how the true Thrushes can represent the *Dentirostres* and the *Raptores*, or what relation there is between the *Myotherinæ*, the *Conirostres*, and the *Insessores*. While, therefore, we are disposed to reject this series of analogies, *when viewed as a whole*, as spurious, we yet feel persuaded there are certain analogical properties, belonging to all aberrant groups, of which we are as yet ignorant. Nor do we feel reluctant in confessing, that in our attempts to discover the extent of these properties, we have hitherto been completely baffled.

Before closing this long and very imperfect exposition of this family, we feel desirous of stating our own doubts upon such points as require investigation. On the nature of the five sub-families there can be but little diversity of opinion, since we consider that the chain of connexion is sufficiently complete, and that the series has been severely *tested*. Between the *Crateropodinæ* and the *Oriolinæ* there is certainly a *hiatus;* yet not sufficiently wide, in our opinion, to render the circular disposition of the whole very questionable. On descending to the minor groups, however,—such, for instance, as the typical *Merulinæ*,—the circles of the sub-families have not been made out: some of the aberrant forms, it is true, may be detected; but in regard to others, we refrain even from offering a conjecture, since nothing is more easy than to describe circles upon paper, when the imagination is excited and the judgment blinded by a favourite theory.

There are, moreover, certain types or genera, which we are even fearful of placing in this family; and others, whose natural affinities appear to us very doubtful. Among these may be named the Australian genus *Sphecotheres*, Vieil., which is probably an aberrant form of the *Oriolinæ*, closely related to *Dulus*, since *Acanthonotus*, Sw., appears to be its prototype among the *Ceblepyrinæ*. In regard to the true affinities of *Grallina*, Vieil., and *Cinclosoma*, H. and V., we confess our ignorance, and it may even be questioned whether the first truly belongs to this family.

ON THE CIRCULAR DISPOSITION OF THE *MYOTHERINÆ*.

The existence of at least four species of *Cinclus* has naturally turned our attention to this most interesting group,—presenting the only exception to the terrestrial habits of the whole order of Perchers. We have already intimated, in treating of the *Myotherinæ*, the situation in nature which we believe is occupied by this genus; and we have ventured so far as to name the leading forms by which the *Myotherinæ* describe their own circle. It will, therefore, be expected, before this view can be received with confidence, that we should demonstrate its correctness; or at least explain upon what grounds our judgment has been formed. This becomes the more necessary, as the question involves the correctness not merely of our views on the true situation of *Cinclus*, but the very foundation of our theory on the natural affinities of the entire order of *Insessores*. We have, upon every occasion, directly combated the opinion that the Bush Shrikes (*Thamnophilinæ*) constitute that aberrant group, by which the Shrikes are united to the Thrushes; and we have already demonstrated the fallacy of such an arrangement. But there is still another test by which the question shall be tried. If an arrangement is natural, the subordinate groups in two contiguous circles, *particularly if those circles are typical*, will perfectly correspond in their direct analogies; and these must be proved, independent of all other analogies they may present to the orders, the tribes, the families, or, in fine, the sub-families of other birds. With the object, therefore, of ascertaining how far our disposition of the *Myotherinæ* may be conformable to nature, and whether the *Thamnophilinæ* are truly a typical group, we shall submit both to this additional test. In the first place, let us compare the *Myotherinæ*, as here distributed, with the orders of birds.

Orders.		Genera.
Raptores	Upper mandible abruptly hooked, and furnished with a tooth more or less prominent.	*Myothera.*
Insessores	Bill in the typical groups gradually curved; the tooth obsolete.	*Pitta.*
Rasores	Bill more or less entire; wings short, convex; feet very strong, formed for walking.	*Myophonus.*
Grallatores	Bill straight, or somewhat inclining upwards; frontal feathers advancing very far.	*Cinclus.*
Natatores	Feet syndactyle.	*Dasycephala.*

The two first, or the typical groups of these columns, require no illustration, since the characteristic form of their bills is sufficient to point out these analogies to every observer. The large dimensions of *Myophonus metallicus,* Tem.; its very strong, though perfectly entire bill, short, convex wings, and robust, elevated tarsi; not to mention its rich metallic gloss, and the narrow, somewhat-pointed plumage on the head and neck;—are so many points of analogy to the Gallinaceous birds, as strong as can well be expected in a family so totally distinct in true affinity. The resemblance of the genus *Cinclus* to the wading birds has been too often noticed to require any comment; while *Dasycephala,* comprehending the *Pipa albifrons* of old authors, appears to typify the feeble-footed *Natatores.*

We must next compare the *Myotherinæ* with the tribes of their own order.

Tribes of Insessores.		Genera.
Dentirostres	Bill abruptly hooked	*Myothera.*
Conirostres	Bill conic, the notch more or less indistinct	*Pitta.*
Scansores	Bill entire; shafts of the tail feathers ending in naked points	*Myophonus.*
Tenuirostres	Bill slender, almost or perfectly entire*	*Cinclus.*
Fissirostres	Base of the bill considerably depressed	*Dasycephala.*

Nothing need be said on the relations of the typical groups. Those, however, between *Myophonus* and the *Scansores* are particularly beautiful. No two tribes, to all appearance, can be more unlike each other than the gallinaceous and the climbing birds; yet here we have a form, unconnected by affinity with either, yet presenting three of their most prominent distinctions; viz., the strong entire bill, and the robust walking feet of the *Rasores,* united to the aculeated tail of the *Scansores.* That Nature has extensively employed this latter character in a very re-

* In our specimen of *Cinclus aquaticus* the bill is perfectly entire; but in *Cinclus Americanus* there is a small obsolete notch.

markable manner, to indicate the same analogies, we shall have frequent occasion to point out. It may be unnecessary, perhaps, to observe, that all ornithologists have overlooked this circumstance, did not the oversight illustrate the absolute necessity of the most minute examination of species, described and re-described in every system. The analogy of *Cinclus* to the *Tenuirostres* is sufficiently satisfactory; but that between *Dasycephala* and the *Fissirostres* is very striking; both have the bill entire, or nearly so,—both have the rictus strongly bristled,—both have weak and syndactile feet: the aberrant forms among the *Fissirostres* have short rounded wings: *Dasycephala*, in its own group, is likewise aberrant, and possesses the same character. Finally, we may remark, that as the Tyrant Shrikes also represent the *Fissirostres*, so were we induced, some years ago, to place the American *Dasycephalæ* with the *Tyranninæ*, without suspecting their relation to the *Merulidæ*.

From the Insessorial tribes we now descend to the families of the *Dentirostres*, one of which is composed of the birds whose analogies we are now tracing.

Families.		Genera.
Laniadæ	Bill abruptly hooked or bent	*Myothera.*
Merulidæ	Bill gradually bent	*Pitta.*
Sylviadæ	?	*Myophonus.*
Ampelidæ	Rictus smooth; feed only upon soft substances	*Cinclus.*
Todidæ	Bill lengthened, base depressed; feet syndactile	*Dasycephala.*

That the *Laniadæ* are represented by *Myothera* must, at least, be admitted, since their absolute affinity has been insisted upon; while *Pitta* possesses the true thrush-like bill of the typical *Merulæ*. This is important, since it may establish the rank of the *Myotherinæ* as the second or sub-typical group of the whole family. What analogy exists between the *Sylviadæ* and *Myophonus* we know not, at present; but as the former unquestionably represents the *Scansores*, so we feel no hesitation in leaving a blank between these two points. The resemblance between *Cinclus* and the *Ampelidæ* cannot be supposed very strong; yet that *Dasycephala* typifies the Flycatchers and Todies there can be no doubt, seeing that some writers have considered the relation as one of actual affinity.

We shall now illustrate the circle of the *Myotherinæ*, by comparing it with a group of its own rank or value. In our views of the analogies existing between the Thrushes and the Shrikes, we have placed the *Myotherinæ* directly opposite to the *Thamnophilinæ*. Let us therefore inquire how far this arrangement is borne out by the contents of each.

Typical Genera.		Typical Genera.
Malaconotus . .	Plumage bright; bill more or less gradually curved. Inhabits the Old World.	*Pitta.*
Thamnophilus . .	Plumage dark, spotted or banded; bill abruptly hooked. Inhabits the New World.	*Myothera.*
Prionops . . .	Bill lengthened; head defended by setaceous frontal feathers; feet partly syndactile.	*Dasycephala.*
?	* * *	*Cinclus.*
Platylophus . .	Bill lengthened, abruptly hooked; wings broad, rounded; secondary quills and tail feathers ending in fine points.	*Myophonus.*

This table may possibly appear very unsatisfactory to those who are accustomed to see "a place found for every thing," or who imagine it necessary that circles should be represented *complete*. It might, nevertheless, be reasonably supposed that *Colurisoma* would very well fill up the blank in our first column; and, indeed, many apparently strong and cogent reasons might be urged on the probability of such being its natural station; but we rather choose, for the present, to confess our doubts on the subject. With regard to the Australian and Madagascarian *Vangæ*, there are so many important facts to be considered and discussed before their true situation in nature can be made out, that we even feel uncertain to what primary group among the *Laniadæ* they truly belong; and these considerations have rendered us doubly fearful of violating nature, to give a fictitious perfection to this last table.

The mistake we formerly committed, in common with all other ornithologists, of placing the *Dasycephalæ* with the Tyrant Flycatchers, led us to inquire in what way the strong resemblance between these two groups could be explained; whether, in short, the relation was one of affinity, or of very strong analogy. It thus became necessary to compare the sub-families of the *Laniadæ* with the genera of the *Myotherinæ*. The following is the result:—

Laniadæ. Sub-families.	Analogies.	Myotherinæ. Genera.
Lanianæ . .	Bill short, curved from the base	*Pitta.*
Thamnophilinæ .	Bill long, curved only at the end	*Myothera.*
Edolianæ .	Hind toe and claw lengthened; tail ending in slender points; *rictus* strongly bristled.	*Myophonus.*
Ceblepyrinæ .	Plumage particularly soft; *rictus* smooth . .	*Cinclus.*
Tyranninæ .	Base of the bill depressed, the tip abruptly hooked; *rictus* bristled.	*Dasycephala.*

Here again, although these analogies are not only unquestionable, but particularly striking, we find that, to preserve *one* column perfect, we must partly reverse the *other;* since *Dasycephala*, and not *Myophonus*, immediately follows *Myothera*. We may probably account for this in two ways; either it is the necessary result of comparing two such groups, like the present, of unequal value; or from losing sight of the fact, that the three aberrant groups in each column form but *one*, which group *then only* becomes equal in value to the two typical ones. However this may be, the relations are too strong to make us suspect, for a moment, that they are not founded in nature.

Upon the minor variations in form, or the sub-genera, we have not thought it expedient to dwell, since the state of ornithological science is not yet sufficiently advanced to sanction opinions on their value, or even on their true stations. Before we can form any correct judgment, for instance, on such subordinate groups as *Drymophila*, *Formicivora*, or *Chamæza*, all apparently entering in one or other of the typical genera, *Myothera* and *Pitta*, it will be necessary that these last-named groups are analyzed, and tested analogically. We have no doubt that *Myothera* contains representations of each of the five genera composing its own sub-family, since *Myothera Colma*, Ill., clearly typifies *Cinclus;* and we have seen, in the French Museum, what appears to us the type of *Dasycephala*. Those species, again, having the feet partially syndactile, appear to represent the typical *Pittæ*, wherein this structure is very prevalent. It will easily be seen, therefore, that any attempt to pursue this inquiry further than to the affinities of *genera*, would be premature, and would presuppose a state of knowledge which is much more likely to be developed in the next age than in this; since naturalists have not yet agreed in their opinions on the primary divisions of organized matter. All we can hope to have achieved, is the determination of the leading groups of the *Merulidæ*, the indication of the typical structure of each, and the mode by which the whole are connected. Our remarks, therefore, have merely opened a field for future research; but it can only be explored in proportion to the slow development of knowledge; and even then will require such an extensive acquaintance with forms, and with their minuter variations, as will render the task, at least for the present, almost hopeless.—Sw.

* The beautiful *Irena*, in like manner, may be supposed to represent *Myophonus* among the *Oriolinæ*.

[36.] 1. Cinclus Americanus. (Swainson.) *American Dipper.*

Sub-family. Myotherinæ. Swainson. *Genus.* Cinclus. Bechstein.
Cinclus Mexicanus. Swains. *Syn.*, p. 367, No. 27.
Pallas Dipper. (*Cinclus Pallasii.*) Bonap. *Orn.*, iii., p. 1, pl. 16, f. i.

Three specimens of this bird were procured by Mr. Drummond near the sources of the Athabasca River, on the eastern declivity of the Rocky Mountains, between the 54th and 56th parallels of latitude. It was previously discovered by the late Mr. W. Bullock in Mexico; but I am not aware that it has as yet been detected in the intermediate country of the United States. Perhaps in its migrations it seldom wanders so far to the eastward as to come within the tracts frequented by the naturalists of the latter country. Several specimens, obtained in the same locality and at the same time with Mr. Drummond's, came into Mr. Leadbeater's hands through the Hudson's Bay Company, one of which has been described and figured by the Prince of Musignano in his splendid American Ornithology. Mr. Drummond made no notes of the habits of this bird; but they are, most probably, very similar to those of the British species, which is termed provincially, "Water-colly," "Water-ouzel," "Dipper," or "Water-crake." This bird has the singular habit, for a species strictly terrestrial in its structure, of walking under the surface of the water on the bed of a stream, using its wings as well as its legs to urge itself along in quest of aquatic insects or the ova of fish. Montagu also states that it sings in a strong and elegant manner, with much variation in its notes, many of which are peculiar to itself, intermixed with a little of the piping of the Wood-lark.—R.

It may possibly have originated in the brevity of our original notice of this species *, that Prince C. Bonaparte has been misled in believing it was the *Cinclus Pallasii* of M. Temminck,—a supposed Asiatic bird, sent by Pallas from the Crimea, and described in the *Manuel d'Ornithologie*, i., p. 177, in the following words: "*Cinclus Pallasii*, formes de notre *Cincle*; tout le plumage, sans exception, d'une seule nuance brune, couleur de chocolat. D'un envoi fait par le Professeur

* *Cinclus Mexicanus*, cinereous-grey, head and chin brown: size of the European species.—Nob., in *Phil. Mag.*, June, 1827.

Pallas pendant son sejour en Crimée, ce qui fait *conjecturer* que l'espèce habite ce pays." Relying on the accuracy of this description, we find that in one bird the plumage is "entirely of a chocolate-brown;" while in the other the head and chin only are of this colour, all the remaining parts of the plumage, without exception, being cinereous-grey. The specimens sent us for examination by Dr. Richardson are evidently young birds; the chocolate-colour of the head being but slightly indicated, and the bills not having acquired that deep black colour seen in the Mexican specimen: the whitish edges to the feathers is a further indication of youth.

We have thought it advisable to alter our original specific name for this bird from *Mexicanus* to *Americanus*. Among some interesting skins from India, recently submitted to our inspection, with his usual liberality, by Dr. Horsfield, we detected another species of *Cinclus*, differing altogether from M. Temminck's description of *Pallasii*, and to which the name of *Asiaticus* may be thought appropriate, since it is a young bird, and may possibly exhibit in adult age some slight variation in colour.—Sw.

DESCRIPTION

Of an *immature* bird, killed on the eastern declivity of the Rocky Mountains, lat. 55°.

Colour blackish-grey, with a bluish tinge on the dorsal aspect, and an approach to clove-brown on the throat and breast. The quill feathers and tail are clove-brown, and the secondaries are very slightly tipped with white. The plumage on the posterior part of the belly, the under tail coverts, and the linings of the wings, are tipped with greyish-white. The *bill* is pale horn-colour, the *legs* and *feet* flesh-coloured.

Form, &c.—*Bill* straight; its breadth and height at the base are nearly equal, but towards the point it is considerably compressed. The upper mandible has a moderately acute ridge, elevated between the nostrils, with a gradual inclination towards the point, which is formed by a rather sudden, though slight curve of the ridge only, and droops a very little. There is a scarcely perceptible notch on each side of the tip, which is somewhat obtuse. The under mandible is very little shorter. *Nostrils* longitudinal slits, situated at the lower margin of a depressed semi-oval membrane, partly clothed with feathers. Forehead narrow, sloping towards the bill. *Wings* concave, and, when folded, about an inch shorter than the tail. The first quill feather is very short, being only about three-quarters of an inch in length; the third is the longest, the second and fourth are almost as long, and the fifth is only a line shorter; the sixth is a quarter of an inch shorter than the fifth; and the remainder diminish in succession: the third, fourth, and fifth have their outer webs very obliquely sinuated. The *tail* is short, and slightly rounded. *Tarsus* entirely naked, somewhat longer than the middle toe and its claw. The first phalanx of the outer toe is closely connected to the base of the inner

one. The hind toe is but little shorter than the inner one, which again nearly equals the outer one. The middle one exceeds these two by the entire length of its last phalanx. The *claws* are short, much compressed, and but slightly curved; the hind one is larger than the middle one, which does not exceed the two lateral ones.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	7	6	Length of the bill on its ridge	0	7½
,, of the tail	2	3	,, of the tarsus	1	2
,, of the folded wing	3	6	,, of the middle toe	0	10
,, of the bill from the angle of the mouth	1	0	,, of its claw	0	3
			,, of the hind toe	0	5½
			,, of its claw	0	4

One of the other specimens, which is of rather smaller dimensions and probably a younger bird, differs in the wing coverts and most of the under plumage being slightly tipped with greyish-white.

In Mr. Swainson's Mexican specimen of the *mature* bird, the entire head and adjoining part of the neck above and below have a blackish-brown tint*, nearly the colour of the soot of pitch-coal. The quill feathers and tail exhibit a duller tint of the same colour, while the rest of the plumage above and below is blackish-grey. The margins of the interscapulary feathers are worn, but exhibit some slight remains of brown; and the ventral plumage is also slightly tinted with brown on the tips. A few of the vent feathers have pale-grey tips. The bill is black. The dimensions of the specimen are nearly the same as those given above.—R.

* *Fuligneus.*

[37.] 1. MERULA MIGRATORIA. (Swainson.) *Red-breasted Thrush.*

GENUS, Merula. RAY. (Turdus, LINN.)*
Turdus migratorius. LINN. *Syst. Nat.*, i., p. 292, No. 6.
Grive du Canada. BUFFON, *Pl. Enl.*, 568, f. 1.
Turdus migratorius. FORSTER. *Phil. Trans.*, lxii., p. 399, No. 21.
Red-breasted Thrush. PENN. *Arct. Zool.*, ii., p. 335, No. 196.
Turdus migratorius. LATH. *Ind.*, i., p. 330, sp. 12.
Red-breasted Thrush, Redbird or Blackbird. HEARNE, *Journ.*, p. 418.
Turdus migratorius. VIEILLOT. *Ois. de l'Ann.*, ii., pl. 60 (male), p. 5, pl. 61 (young).
Turdus migratorius. (*The Robin.*) WILSON, i., p. 35, pl. 2, f. 2. SABINE, *Frankl. Journ.*, p. 674. BONAP. *Syn.*, p. 75, No. 97.
Merula migratoria. SWAINS. *Syn.*, p. 367, No. 28.
Peepeechew. CREE INDIANS.

None of the feathered tribe are better known in America than this, which, from its red breast and familiar habits, has obtained the name of the "Robin." It winters, in immense numbers, in the Atlantic States, from New Hampshire to the Gulf of Mexico, deserting at that season the tracts to the westward of the Alleghany range. Notwithstanding the havoc made in its flocks for the supply of the markets, it affects the neighbourhood of towns, and is observed to feed much on the fruit of the sour-gum (*Nyssa sylvatica*), and on poke-berries (*Phylotacca decandra*). Sometimes it disappears from a district for a week or two, and returns again in larger flocks than before. In March it begins to sing, and pairs early in April. Many pairs breed in the United States, but great numbers spread themselves over every part of the fur countries, extending almost to the northern extremity of the continent. Its nests were observed by the Expedition as high as the sixty-seventh parallel of latitude; and, from the reports of various travellers, it is known to visit the north-west coast of America. It arrives in the Missouri (in lat. 41½°), from the eastward, on the 11th of April; and, in the course of its northerly movement, reaches Severn River in Hudson's Bay about a fortnight later. Its first appearance at Carlton House, lat. 53°, in the year 1827, was on the 22nd of April. In the same season it reached Fort Chepewyan, in latitude 58¾°, on the 7th of May, and Fort Franklin, in lat. 65°, on the 20th of that month. Those that build their nests in the fifty-fourth parallel of latitude, begin to hatch

* It is seldom that the great Swede can be accused of not having profited by the labours of his predecessors, or of neglecting their classic terms. In this instance, our veneration for the talents of our illustrious countryman Ray, induces us to adopt with pleasure the suggestion that has already been made, of distinguishing the true Thrushes (of which the Blackbird is probably the type) by the generic name of *Merula*.—Sw.

in the end of May; but, eleven degrees farther to the north, that event is deferred till the 11th of June. The snow even then partially covers the ground; but there are, in those high latitudes, abundance of the berries of the *Vaccinium uliginosum*, and *Vitis idæa*, *Arbutus alpina*, *Empetrum nigrum*, and of some other plants, which, after having been frozen up all the winter, are exposed, on the first melting of the snow, full of juice and in high flavour. Shortly afterwards, when the callow young require food, the parents obtain abundance of grubs.

The Red-breasted Thrush builds its nest on the branch of a spruce-fir-tree, generally about five or six feet from the ground, taking no particular pains to conceal it, and frequently selecting a tree in the immediate vicinity of a house. Its nest is formed like that of the European Thrush, of grass and moss, neatly interwoven and lined with a compact coating of dung and clay. The male and female labour in concert in constructing it; and when the young are hatched, they jointly undertake the task of feeding them. The eggs, five in number, are about fourteen lines long, and have a bluish-green colour, like those of the common Thrush. The male is one of the loudest and most assiduous of the songsters that frequent the fur countries, beginning his chaunt immediately on his arrival. His notes resemble those of the common Thrush, but are not so loud. Within the arctic circle the woods are silent in the bright light of noon-day, but towards midnight, when the sun travels near the horizon, and the shades of the forest are lengthened, the concert commences, and continues till six or seven in the morning. Even in these remote regions the mistake of those naturalists who have asserted that the feathered tribes of America are void of harmony might be fully disproved. Indeed, the transition is so sudden from the perfect repose, the death-like silence of an arctic winter, to the animated bustle of summer; the trees spread their foliage with such magical rapidity, and every succeeding morning opens with such agreeable accessions of feathered songsters to swell the chorus—their plumage as gay and unimpaired as when they enlivened the deep-green forests of tropical climes, that the return of a northern spring excites in the mind a deep feeling of the beauties of the season, a sense of the bounty and providence of the Supreme Being, which is cheaply purchased by the tedium of nine months of winter. The most verdant lawns and cultivated glades of Europe, the most beautiful productions of art, fail in producing that exhilaration and joyous buoyancy of mind which we have experienced in treading the wilds of Arctic America, when their snowy covering has been just replaced by an infant but vigorous vegetation. It is impossible for the traveller to refrain, at such

moments, from joining his aspirations to the song which every creature around is pouring forth to the great Creator.

DESCRIPTION

Of a *male* killed, May 26th, 1826, at Fort Franklin, Great Bear Lake.

Colour of the upper aspect and sides of the head brownish-black, gradually fading, on the back of the neck, to blackish-brown, and on the posterior part of the back and tail-coverts to smoke-grey; the brownish feathers on the sides of the neck and between the shoulders are margined with the latter colour. The eye is encircled by an interrupted white border. The *wings* are blackish-brown, the exterior edges of the feathers faded and greyish; the lowest row of lesser coverts is minutely tipt with wood-brown. The *tail* is brownish-black, the exterior feather having a large white spot on the extremity of its inner web, and the adjoining one a narrow white tip. *Under surface.*—The white chin is spotted with brownish-black, and a narrow belt of the same crosses the throat from cheek to cheek. The rest of the inferior surface as far as the vent, and also the under wing-coverts, are pure reddish-orange *. The vent feathers and under tail-coverts are white, the latter spotted with clove-brown. The insides of the quill feathers, and the under surface of the tail, are clove-brown. The *bill* is lemon-yellow, with a brownish tip. *Legs* pale umber-brown. The whole of the plumage appears worn on the edges in the spring, the season in which this specimen was procured.

Form, &c.—*Bill* straight, weakened at the base by large depressions for the nostrils, between which the ridge is prominent, moderately compressed towards the point; ridge obtuse, its tip arched; cutting margin straight to the tip, which droops, and is strongly notched on each side. *Nostrils* small, oval, longitudinal; there are some strong hairs at the angle of the mouth. *Wings* nearly two inches shorter than the tail. *Quill feathers* considerably narrowed at the point; the first or spurious quill is very short; the third and fourth are the longest; the fifth is a line or two shorter; the second is intermediate between the fifth and sixth; the outer webs of the third, fourth, fifth, and sixth are strongly sinuated. The *tail* is even, and rather long. *Legs* pale umber-brown. The *tarsi* are naked. The middle and exterior toes are united by the whole length of the first phalanx of the latter.

Dimensions

Of the *male*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	10	6	Length of the bill from the angle of the mouth	1	1
,, of the tail	4	0	,, of the tarsus	1	4
,, of the longest quill feather	4	9	,, of the middle toe	0	11½
,, of the folded wing	5	6	,, of its claw	0	4
,, of the bill measured along the ridge	0	9	,, of the hind toe	0	7
			,, of its claw	0	4½

* *Helvolus.*—Intermediate between buff-orange and tile-red.

MERULA MINOR.

Turdus minor Gm

London Printed for John Murray Fleet street by the Author January 1st 1812

The *female* has more of the smoke-grey colour on the back; the feathers on the head are also edged with that colour. There is more white on the throat, and all the orange-coloured feathers beneath are edged with white. Her dimensions are scarcely inferior to those of the male; some specimens of both sexes, however, measure, when recent, very little more than nine inches in length.

The *young* bird differs in the dorsal plumage and wing coverts, having narrow brownish-white streaks on the shafts; in the shafts of the feathers of the head being also pale; in the rump and tail coverts being obscurely tipt with black; in the chin being nearly unspotted white; and in the reddish-orange of the under surface being much paler, and marked with pretty large transverse black spots on the tips of the feathers. The bill is dark umber-brown, with the angles and borders of the mouth orpiment-orange.

[38.] 2. MERULA MINOR. (Swainson.) *Little Tawny Thrush.*

GENUS, Merula. RAY. (Turdus. LINN.)
The Little Thrush. (*Turdus parvus.*) EDWARDS, pl. 296.
Turdus iliacus Carolinensis. BRISSON. *Orn.*, ii., p. 212, omitting synonymes.
Turdus minor. GMELIN. *Syst.*, i., p. 809, No. 321, omitting synonymes.

CH. SP. MERULA MINOR, *spadicea subtus albescens, pectore dilutè ferrugineo maculis xerampelinis, remigibus* 3—4 *longissimis: remige secundâ quintam superanti.*

SP. CH. LITTLE TAWNY THRUSH, ferruginous; beneath whitish; throat and breast ferruginous-white, with pale spots; the second, third, and fourth quills longest, the second shorter than the fourth.

I can add nothing to the little that is known of the history of this Thrush, except that it makes its appearance on the banks of the Saskatchewan in the month of May; but whether it breeds there, or proceeds farther north, I am unable to say. It frequents damp, shady woods, and appears to be a solitary, silent species. Mr. William Bartram, who sent Edwards the specimen which he has figured, says that it arrives in Pennsylvania in April, and continues there all the summer, employed in rearing its young. It is possible, however, that that naturalist may have ascribed to it the habits of some of the species which so nearly resemble it.—R.

The great confusion in which the nomenclature of the small North American Thrushes has long remained, compels us again to make a digression on synonymes, and to occupy time and space which might be devoted to matters of more lasting interest. The Prince of Musignano, in his valuable "Observations" and "Synopsis," is of opinion that the *Turdus mustelinus* of Wilson is a new species, first described in the American Ornithology, and that Wilson's *solitarius* is the *minor* of Gmelin and Latham; the first being described as "tawny-brown" on the upper plumage, and the second as "olive-brown, inclining to reddish on the tail."—*Syn.*, pp. 75, 76.

In the first of these opinions we perfectly coincide; the second requires some investigation; we must, therefore, go back to original authorities. The first systematist in whose works we find the name of *Turdus minor* is Gmelin; for it is very remarkable, that although the valuable work of Edwards is frequently cited in the 1767 edition of the *Systema Naturæ*, we can discover no reference to the "Little Thrush" figured in the 296th plate of this author's Gleanings. Gmelin, therefore, is the first who describes it in systematic language, and his words are these: "T. *spadiceus, subtus albus, pectore flavicante maculis atris vario :*" and here, among other synonymes, we find for the first time a reference to the above plate. To this species, therefore, we shall confine our remarks, because the accuracy of Edwards is perhaps greater than that of any naturalist of his day, and because he is the only one quoted by Gmelin, with the exception of Catesby, whose description is rendered more intelligible by a coloured plate. Edwards says of his bird, "The head, upper sides of the neck, back, wings, and tail, *are all of a reddish-brown,* or clay-colour, not at all varying in the shades of the feathers, as they do in our English Thrushes. The throat just beneath the bill is whitish, the breast yellowish, with *dusky* spots." He then goes on to state, that this description by no means agrees with the slight account given by Catesby of another bird, called by the name of Little Thrush. Brisson comes next, and we never consult his valuable pages without deriving solid information. Of his *Turdus iliacus Carolinensis* he observes, that all the upper parts, wings, and tail, "sont d'un brun-roux. La gorge, la partie inférieure du col et la poitrine sont d'un *roussatre*, marqué de taches d'un brun-roux."—*Orn.*, ii., p. 214. This description was made from a bird sent from Canada, as that of Edwards was drawn up from a Philadelphian specimen.

It thus appears that both these original writers describe one and the same species. It is also clear that Gmelin borrowed his specific character, not from

Catesby's bird, but from that of Edwards, which is consequently his *Turdus minor*, a species well distinguished by its tawny, or *reddish*-brown plumage, in opposition to the "*olive*-brown" of Wilson's *solitarius*. We leave the other synonymes of Gmelin, and the whole of those quoted by Brisson, entirely out of the question. It is plain that Brisson had our bird *only* before him, which he describes with even greater precision than Edwards: the *reddish* breast is a nice, but a very masterly distinction.

As to the "Little Thrush" of Catesby, it appears totally impossible to identify it with any one species; since, besides those here described, we know of two others, each of which might pass for the bird he may have intended to commemorate. The same observation is applicable to the smaller American Thrushes, mentioned in "*Arctic Zoology*," "*Synopsis of Birds*," &c. The *Turdus minor* of M. Vieillot (*Ois. de l'Am.*, ii., p. 7) is an imaginary species, confessedly compounded not only of the *fuscus* and *minor* of Gmelin, but of the West India and the Carolina species; neither is it possible to ascertain which of these is intended to be represented on the plate. The *Turdus mustelinus* of this author is supposed to be the *melodus* of Wilson, although this has been questioned.

It is somewhat surprising, that the species whose external characters we have now illustrated, should have escaped the observation of late American naturalists. We have long had in our museum a very fine plumaged specimen, sent to us from Georgia. It perfectly agrees, in every material point, with that here described; but the peculiar rufous, or rather ferruginous tinge, which uniformly pervades the whole of the upper plumage, is much clearer and more intense in the Georgian specimen than in the northern.—Sw.

DESCRIPTION

Of a *male*, killed at Carlton House, May 29th, 1827.

Colour of the whole dorsal aspect yellowish-brown, slightly inclining to orange-brown. The inner vanes of the quill and tail feathers are liver-brown. *Under surface.*—The chin is white; the cheeks, throat, and upper part of the breast have a faint tinge of wood-brown, and are marked with numerous roundish, not very well defined spots of hair-brown. These spots also extend, but more faintly, to the lower part of the breast, which is whitish. The sides of the breast, flanks, and linings of the wings are smoke-grey, the belly and under tail coverts white. The insides of the quill and tail feathers are pale broccoli-brown. The *bill* is blackish-brown above, pale horn-colour beneath. *Legs* very pale-brown.

Form, &c.—*Bill* depressed at the base, its breadth there considerably exceeding its height. Its length from the forehead is more than twice its width at the nostrils. There is an elevated ridge between the nostrils. The angles of the mouth are furnished with strong bristles, as in the other Thrushes we have to describe. The *wings*, when folded, are about an inch and a half shorter than the tail. The first or spurious quill feather is very narrow, and barely exceeds half an inch in length; the second is shorter than the third or fourth, but much longer than the fifth: the third is the longest. The outer webs of the third and fourth are obliquely sinuated near their tips. The *tail* is even, the two central feathers being a very little shorter than the rest*. The hind toe is more robust than the others, and has the longest claw; it is equal to the inner one in length: the outer toe is a little longer. The latter is united, a little beyond its first joint, to the base of the middle toe. The hind claw is more curved than the others.

Dimensions
Of the *mate*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	7	6	Length of the bill, measured along the ridge	0	7½
,, of the tail	3	0	,, of the tarsus	1	3
,, of the folded wing	4	0	,, of the middle toe	0	9
,, of the bill, from the angle of the mouth	0	11	,, of its claw	0	3
			,, of the hind toe	0	5
			,, of its claw	0	3¼

[39.] 3. Merula Wilsonii. (Bonaparte.) *Wilson's Thrush.*

Genus, Merula. Ray. (Turdus. Linn.)
Tawny Thrush. (*Turdus mustelinus.*) Wilson †, v., p. 98, pl. 43, f. iii.
Turdus Wilsonii. Bonap. *Syn.*, p. 75, No. 100. *Observ.*, p. 34, No. 73.

Ch. Sp. Merula Wilsonii, *olivaceo-brunnescens subtus albescens, gutture pectoreque maculis fuligneis interstinctis, remigibus* 2—3—4 *longissimis; remige secundâ quartam æquanti.*

Sp. Ch. Wilson's Thrush, obscure olive-brown; beneath whitish; throat and breast marked with dusky spots; the second, third, and fourth quill feathers the longest, the second equal to the fourth.

This Thrush arrives on the banks of the Saskatchewan in May, and, during summer, haunts the alder thickets and dense willow groves that skirt the

* In a specimen in Mr. Swainson's museum the two outer tail feathers are slightly shorter than the others, and its closed wing is also two lines shorter than the one described above.

† This Thrush was first described by Wilson; but the name of *Mustelinus*, which he gave it, was preoccupied. Vide Bonap., *Observ.*, *Trans. Phil. Soc. Phil.*, iv., p. 34, No. 73.

marshes. It, doubtless, breeds there; but I had not an opportunity of seeing its nest *, nor can I speak of the extent of its range to the northward. Wilson states that it makes its appearance in Pennsylvania, from the south, regularly about the beginning of May, stays a week or two, and passes on to the north and to the high mountainous districts to breed. It has no song, he says, but a sharp *chuck*.—R.

We have compared the northern specimens with no less than five others, killed last year in New Jersey, and now in our museum. It is with peculiar satisfaction that, after much trouble, we find our own observations confirm, in their full extent, the judicious remarks made upon this species by the Prince of Musignano; and gladly do we follow him in commemorating it by the name of the great American ornithologist. True it is, that, by the strict rules of priority, we may not perhaps be justified in so doing; this species having received, in a popular compilation, another name. But not even the laws of nomenclature, as the late venerated Sir James Smith has expressed, must upon *every* occasion impose shackles upon superior minds. Few ornithologists will be disposed to withhold from the memory of Wilson the only honour it is now in their power to give.—Sw.

DESCRIPTION

Of a specimen, killed at Carlton House, lat. 53°, May, 1827.

Colour of the whole dorsal aspect an uniform deep hair-brown, inclining slightly to oil-green. The cheeks and the spaces between the eyes and nostrils are pale yellowish-brown, obscurely spotted with hair-brown. The *under plumage* is mostly white, tinged on the sides of the throat with yellowish-brown, and faintly clouded and blotched on the flanks with hair-brown. The throat and breast are marked with broad, triangular, blackish-brown spots on the tips of the feathers. *Bill* dark umber-brown, pale at the base of the lower mandible. *Legs* pale yellowish-brown.

Form, &c.—*Bill* shorter than that of *M. minor*, less compressed, and having a less distinct ridge. The tip droops a little in both, and has a small notch on each side. The *wings*, when folded, are an inch shorter than the tail. The third quill feather is the longest, the second and fourth are scarcely a line shorter, and are equal to each other; the tenth is fourteen lines shorter than the third, and the first is about three-quarters of an inch long. The outer webs of the third and fourth are distinctly sinuated; that of the fifth is even. The *tail* is very slightly emarginated; the central pair of feathers being, however, in our specimens, a little longer than the adjoining ones. The *tarsi* are longer than those of *M. silens*, equal to those of *M. solitaria*, and shorter than those of *M. minor*.

* Mr. Yarrell has received eggs from America, which he is assured are those of this bird. They have a deep bluish-green colour, without spots, and are an inch in length.—R.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	7	6	Length of the bill on its ridge	0	7
,, of the tail	2	9	,, of the tarsus	1	1
,, of the folded wing	3	10½	,, of the middle toe	0	7½
,, of the bill from the angle of the mouth	0	8½	,, of the middle nail	0	2½
			,, of the hind toe	0	4½
			,, of the hind nail	0	3

[40.] 4. Merula solitaria. (Swainson.) *Hermit Thrush.*

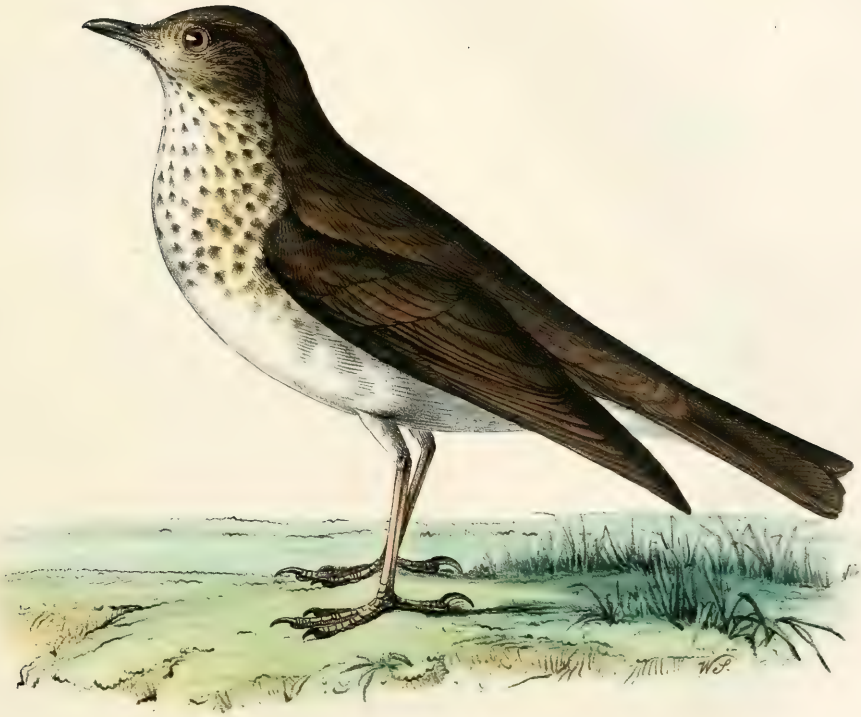
Genus, Merula. Ray. (Turdus. Linn.)
Hermit Thrush. (*Turdus solitarius.**) Wilson, v., p. 95, pl. 43, f. ii.
Turdus minor. Bonap. *Syn.*, p. 75, No. 100. *Observ.*, p. 40, No. 72.

Ch. Sp. Merula solitaria, *fuscescenti-ferrugineâ subtus albescens, gutture pectoreque maculis nigris notatis, remigum marginibus et caudâ cum tectricibus ejus superioribus rufescentibus, remigibus* 3—4—5 *longissimis; remige secundâ sextâque æqualibus, unguibus parum curvatis.*

Sp. Ch. Hermit Thrush, dark ferruginous-brown, beneath whitish; throat and breast marked with black spots; margins of the quills, the tail, and its upper coverts, tinged with rufous; the third, fourth, and fifth quills the longest, the second and sixth nearly equal; claws slightly curved.

According to Wilson, this bird inhabits the southern parts of the United States the whole year, frequenting the deepest and gloomiest recesses of the cane and myrtle swamps. It is rarely seen in Pennsylvania, unless for a few weeks in the spring and late in the fall, and in both seasons it is mute, having only, in the spring, an occasional squeak, like that of a young stray chicken. One specimen

* Having stated the reasons which induce us to consider the *Turdus solitarius* of Wilson as a distinct species from the *Turdus minor* of Gmelin, it remains to be considered whether the original name, imposed on the former by its first describer, can be retained with propriety. Nomenclators have applied this specific appellation to three different birds. 1. The *Turdus solitarius* of Latham is stated by M. Temminck to be the young of the European *cyanus;* an opinion confirmed by our own observations, noted more than twenty years ago, during a residence in Sicily, where these birds, from the mountainous nature of the island, are particularly common. This name, therefore, sinks into a synonyme. 2. The *Turdus solitarius* of Montagu (*Supp. Orn. Dict.*) is now well known to be the young of the common Starling in its first year's plumage, and consequently has been expunged from our systems. 3. The *Turdus solitarius* of Mr. Stevens. This is first stated (*Gen. Zool.*, x., p. 303) to be the same as the *T. solitarius* of Dr. Latham, —a nominal species, already disposed of; but in a subsequent volume, printed in 1827, this name seems transferred to the *cyanus* of M. Temminck. Wilson wrote in 1812. Amidst this confusion, one point, however, is clearly established; and it is this, that if the name of *solitarius* is to be retained in our systems to any species of Thrush, it can only be given, with strict propriety, to the bird so designated by Wilson. It is upon these grounds that we have thought it right to preserve the original name.—Sw.



MERULA SOLITARIA.

London Printed for John Murray Bookseller to the Admiralty January 1st 1836

was procured by us in the spring on the north side of Lake Huron; but it was not seen by the Expedition in any other quarter; it may, nevertheless, be a visitor to the more northern regions, as it might have been readily overlooked, owing to its great similarity to some of the other small Thrushes. Wilson found numbers breeding, in May, in the Chactaw nation. He describes a nest which he discovered on the 12th of that month, as being attached to the upper part of the body of the horizontal branch of a tree. It was constructed with great neatness, without mud or plaster; the outside composed of coarse rooty grass, intermixed with horsehair; and the lining of a fine green-coloured grass, perfectly dry and laid circularly. The eggs were four, of a pale greenish-blue, marked with specks and blotches of olive, particularly at the great end. The food of the Hermit Thrush consists chiefly of berries, that occur in a perpetual succession in the low southern swamps which it frequents.—R.

DESCRIPTION

Of a specimen, killed at Penetanguishene, on the north shore of Lake Huron.

Colour of the dorsal aspect yellowish-brown, approaching, on the exterior webs of the quill feathers, the tail coverts, and tail, to dull reddish-orange: this latter tint is deepest on the tail coverts. The inner webs of the quill feathers are pale clove-brown. The auriculars have a dull hair-brown colour. The chin is greyish-white; the under surface of the neck and the breast are white, slightly tinged with wood-brown; and there is a pretty large triangular mark of blackish-brown on the tip of each feather. The middle of the belly and vent feathers have a very pale french-grey colour, approaching to white; and the sides of the breast and flanks have a pure hair-brown tint. The inner wing coverts have a pale tinge of wood-brown, and the insides of the quill feathers are clove-brown; their inner margins towards their bases being pale buff-orange*. The *bill* is dark umber-brown above, the under mandible yellowish, becoming dark-brown at the tip. *Legs* clay-coloured.

Form, &c.—*Bill* shorter than that of *M. minor*, and a little narrower at the base; longer than that of *M. Wilsonii;* and of the same length with *M. silens*, but broader. The notch on each side of the tip is small, but distinct. The folded *wings* are an inch shorter than the tail. The first quill feather is less than an inch in length; the fourth is the longest, the third is scarcely perceptibly shorter, the fifth is not a line shorter, and the second, which is two lines shorter, is a little longer than the sixth: the third, fourth, fifth, and sixth are sinuated exteriorly, the last-mentioned one very obliquely. *Tail* slightly emarginated, the central feathers being about two lines shorter than the exterior ones. *Tarsi*, like those of the pre-

* In *Merula minor* and *M. Wilsonii*, this part is white, or yellowish-white, without any approach to buff. In *M silens*, it is cream-yellow.—R.

ceding and following species, covered before and behind with a scale, in which no divisions can be perceived. Hind *toe* and inner one equal in length. *Nails* much compressed, slightly curved; the hind one the largest.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	6	9	Length of the bill on the ridge	0	7
,, of the tail	2	9	,, of the tarsus	1	1½
,, of the folded wing	3	6½	,, of the middle toe	0	9
,, of the bill, from the angle of the mouth	0	10	,, of its claw	0	1¾
			,, of the hind toe	0	4¼
			,, of its claw	0	2½

That the history of the small North American Thrushes may be rendered as complete as possible, we here subjoin a detailed description of the *Merula silens*, particularly as it seems intermediate between *M. solitaria* and *M. Wilsonii*, having the rufous tail of the first, and the greyish olive-brown upper plumage of the second.

Merula silens. (Swainson.) *Silent Thrush.*

Merula silens. Swains. *Syn. Mex. Birds*, No. 31.

Ch. Sp. Merula silens, *olivaceo-brunnescens subtus albescens, gutture pectoreque maculis fuligneis notatis, caudâ tectricibusque ejus sub-rufescentibus, marginibus remigum pallentibus; remige sextâ secundam sub-æquanti, unguibus curvatis.*

Sp. Ch. Silent Thrush, greyish-olive, beneath whitish; throat and breast marked with dusky spots; tail and upper coverts tinged with rufous; edges of the quills pale, the second and sixth nearly equal; claws fully curved.

DESCRIPTION

Of a specimen in Mr. Swainson's museum, killed five leagues to the west of Mexico.

Colour of the upper plumage hair-brown, inclining to oil-green,—a rather paler and greyer tint than that of *M. Wilsonii*. The exterior edges of the quill feathers are pale, approaching to yellowish-grey. The tail and its upper coverts present a nearly uniform tint of yellowish-brown, verging towards orange-brown or ferruginous: this colour is very nearly the same with that of the dorsal plumage of *M. minor*, and is less deeply ferruginous than the tail coverts of *M. solitaria*. The *under plumage* is whitish, with a slight tinge of brown on the sides of the throat, and a deeper tint of yellowish-grey on the sides of the breast, flanks, and inner wing coverts. The throat and breast are marked with triangular spots of clove-brown, like those of *M. Wilsonii*. The interior borders of the quill feathers, particularly towards their bases, are cream-yellow, having less colour than those of *M. solitaria*, but more than the same parts of the other small Thrushes noticed in this work. *Bill* dark-brown, lower mandible pale posteriorly. *Eyes* brown.

Form, &c.—*Bill* more slender than that of the other small Thrushes described in the text. The folded *wings* are an inch shorter than the tail. The second quill feather is a quarter of an inch shorter than the fourth, which is the longest, the third and fifth very nearly equal the latter, and the sixth is only a little shorter than the second: the outer webs of the second, third, and fourth are distinctly sinuated; that of the fifth is very obliquely narrowed. The *tail* is more distinctly emarginated than that of any of the other Thrushes with which we have compared it above: the central feathers are upwards of two lines shorter than the exterior ones.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	7	0	Length of the bill on the ridge	0	7
,, of the tail	3	3	,, of the tarsus	1	0¾
,, of the folded wing	3	9	,, of the middle toe	0	8½
,, of the bill from the angle of the mouth	0	9½	,, of the middle claw	0	3
			,, of the hind toe	0	5
			,, of the hind claw	0	3¾

ORPHEUS MERULOIDES.

London Printed for John Murray Bookseller to the Admiralty January 1st 1829

[41.] 1. ORPHEUS MERULOIDES. (Swainson.) *Thrush-like Mock-bird.*

GENUS, Orpheus. SWAINS.
Spotted Thrush. LATH. *Syn.* iii., p. 27, sp. 13.
Varied Thrush. PENN. *Arct. Zool.*, ii. p. 337, pl. 15.
Turdus nævius. LATH. *Ind.*, i., p. 331, sp. 13. ?

CH. SP. ORPHEUS MERULOIDES, *nigrescenti-plumbeus subtus ad rostrum usque helvolus, fasciâ pectoris nigrâ incompletâ, remigibus extus maculatis tectricibusque helvolo bi-faseiatis.*

SP. CH. THRUSH-LIKE MOCK-BIRD, blackish-grey, beneath almost entirely reddish-orange, with the exception of an imperfect black belt across the breast; wings crossed with two reddish-orange bands, and the quill feathers blotched exteriorly with the same.

PLATE XXXVIII.

The structure of this bird appears intermediate between *Merula* and *Orpheus*. To the first it assimilates by the comparative straightness of its bill, the length of its wings, and the size, length, and scutellation of its tarsi. On the other hand, it exhibits unequivocal indications of those characters by which *Orpheus* is so decidedly separated from the true Thrushes; the notch of the upper mandible is nearly obsolete; the wings, although long, are slightly rounded; and the tail is not only rounded and more lengthened, but the lateral feathers are marked with those conspicuous white tips, which so strongly characterize the Mocking-birds. It is unfortunate that, in the only specimen procured, the tail feathers, upon an accurate inspection, appear in a state of moulting; and thus neither their true length, nor, perhaps, their true form, are developed. We remark, for instance, that the two middle feathers, as in some of the typical *Merulæ*, are shorter than the rest; but these, we apprehend, are feathers not yet fully developed. This opinion is, in a great measure, confirmed by the figure of Pennant, where the tail is represented as rounded, and fully as long as the wings, a structure which precisely agrees with the American Mocking-bird, the type of the genus *Orpheus*. We have, nevertheless, preferred representing upon our plate a correct figure of the specimen in question, rather than to supply its supposed deficiencies from any other source than nature. We have in vain looked for a second specimen, both in the London and Parisian collections. In placing this bird with its true congeners, we have ventured to bestow upon it a specific name, which will express what appears to us its real affinities.—Sw.

This bird was discovered at Nootka Sound, in Captain Cook's third voyage, and male and female specimens, in the possession of Sir Joseph Banks, were described by Latham: Pennant has also described and figured the same male. The specimen represented in this work was procured at Fort Franklin, lat. 65¼°, in the spring of 1826. We did not hear its song, nor acquire any information respecting its habits, except that it built its nest in a bush, similar to that of the *Merula migratoria*. It was not seen by us on the banks of the Saskatchewan; and, as it has not appeared in the lists of the birds of the United States, it most probably does not go far to the eastward of the Rocky Mountains in its migrations north and south. It may, perhaps, be more common to the westward of that ridge.—R.

DESCRIPTION

Of a specimen killed at Fort Franklin, lat. 65¼°, in May, 1826.

Colour of the *dorsal aspect* blackish-grey; the head, sides of the neck, and an imperfect belt across the breast, are pitch-black. The blackish auricular feathers are encircled by a narrow stripe of reddish-orange, which commences on the posterior part of the upper eyelid. The *tail* is greyish-black, the inner webs of its feathers being blackish-brown; there is a large white spot on the tip of the inner web of the outer feather, and brownish-white spots on the tips of all the other feathers, the spots being less, however, the nearer they are to the middle of the tail, and the central feathers having merely a minute brownish speck on their tips. The quill feathers, greater coverts, and the adjoining row of lesser coverts, are liver-brown; two rather broad bands of pale reddish-orange cross the wings on the tips of the two last-mentioned sets of feathers. There is also a conspicuous patch of the same colour on the primaries, near their quills, and a smaller one about half way to their tips. The primary coverts and their secondaries are likewise edged with the orange, but more narrowly. The tertiaries are slightly tipped with white.

Under surface.—The chin, throat, and belly are reddish-orange; the vent feathers white, and the under tail coverts are blackish-grey, edged with orange, and largely tipped with white. The flanks and axillary feathers are bluish-grey. The wing-linings are white and lead-grey, slightly marked with orange; and the insides of the quill feathers are lead-grey, with a broad whitish band on their bases, and on the tips of the greater inner coverts. The *bill* is black, pale-yellow at the base of the under mandible. *Legs* flesh-coloured.

Form.—*Bill* straight, compressed, more slender than that of *Merula migratoria*, but otherwise bearing a strong general resemblance to it. Cutting margin of the upper mandible slightly and gradually curved towards its point, without a notch. *Rictus* bristled. The *wings* fall an inch and a half short of the end of the tail; they approach those of *Merula migratoria* in form, being much longer and more pointed than those of *Orpheus felivox*.

The first (or spurious quill feather) is very short (three-quarters of an inch); the fourth is the longest; the third and fifth nearly equal it; the second is about five lines shorter than the fourth; and the sixth about as much shorter than the second; the fifth and sixth are wide apart (three-quarters of an inch); the following ones diminish in succession about a quarter of an inch each; the outer webs of the third, fourth, and fifth are pretty strongly notched. The *tail* appears to be slightly rounded, the outer feathers being a line or two shorter than the others; the two central ones are a quarter of an inch shorter, but they appear to be not yet fully grown. *Tarsus* considerably longer than the middle claw; hind toe shortest and most robust; inner toe a little shorter than the outer one; the base of the latter is very shortly connected with the middle one.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	9	9	Length of the tarsus	1	3
„ of the tail	3	6	„ of the middle toe	0	10½
„ of the folded wing	4	11	„ of its claw	0	4
„ of the bill measured along its ridge	0	10	„ of the hind toe	0	6
„ of the bill from the angle of the mouth	1	1½	„ of its claw	0	4½

[42.] 2. Orpheus rufus. (Swainson.) *Fox-coloured Mock-bird.*

Genus, Orpheus. Swainson. *Zool. Journ.*, iii., p. 167.
Fox-coloured Thrush. Catesby. *Carol.*, i., p. 28.
Ferruginous Thrush. Penn. *Arct. Zool.*, ii., p. 335.
Turdus rufus. Lath. *Ind.*, i., p. 338, sp. 44.
Ferruginous Thrush (*Turdus rufus.*) Wilson, ii., p. 83, and pl. 14, f. 1, (Brown Thrush.)
Turdus rufus. Vieil., *Ois. de l'Am.*, ii., pl. 59, p. 54. Bonap. *Syn.*, p. 75, No. 93.

This well-known songster has obtained a variety of local names, such as the "Ground Mocking-bird," "French Mocking-bird," "Brown Thrush," and "Thrasher," in the United States. It was seen by the Expedition only at Carlton House; and as it does not enter into Mr. Hutchins' pretty full list of the birds of Hudson's Bay, it is probable that it does not extend its range beyond the fifty-fourth parallel of latitude. It winters in the southern parts of the United States, arrives in Pennsylvania about the middle of April, and breeds throughout the

country, extending from thence to the Saskatchewan. It quits the fur-countries, with the other migratory birds, early in September, and by the middle of that month it also departs from Pennsylvania. It does not derive its name of Mocking-bird from any habit it has of mimicking the voices of other birds, but, as Wilson thinks, from the resemblance its notes have to those of the *Turdus polyglottos*, or real Mocking-bird. Its song, though inferior to that of the bird just mentioned, is remarkably loud, clear, and various, bearing considerable resemblance to that of the European Thrush (*Turdus musicus*). Its food consists of grubs, beetles, caterpillars, grains, cherries, and berries of various kinds. It frequents low thickets, and builds its nest, near the ground, of sticks, lined with dry leaves, and a layer of fine fibrous roots. It lays five eggs, which, according to Wilson, are of a bluish-white colour, speckled with reddish-brown.

DESCRIPTION

Of a *female*, killed at Carlton House, 5th July, 1827.

Colour of the whole dorsal aspect, including wings and tail, orange-coloured-brown; this colour is a little greyer on the forehead, but does not vary a single shade elsewhere. Two narrow reddish-white bands, bordered above with umber-brown, cross the wings on the tips of the greater coverts, and the adjoining row of the lesser coverts. The inner webs of the quill feathers have an umber tint. On the sides of the neck and inferior surface of the body, the colour is soiled brownish-white, interspersed pretty thickly, on the sides of the neck, breast, shoulders, and flanks, and more sparingly on the belly, with triangular liver-brown spots on the ends of the feathers. The inner wing coverts are pale wood-brown, almost unspotted, and the insides of the quill feathers and tail beneath have a handsome tint, intermediate between flesh-red and ochre-yellow. *Bill* blackish-brown; the base of the under mandible yellowish. *Legs* wax-yellow. *Irides* king's yellow.

Form, &c.—*Bill* longer, but stronger, and not so much compressed as that of the *Merula migratoria;* cutting margin of the upper mandible curving regularly, but gently, from near its middle, without a notch at the tip. There are three or four pretty strong hairs at the base of the upper mandible. Wings short and rounded, being three inches and a half shorter than the tail. First quill feather (spurious) not above half the length of the fourth and fifth, which are the longest; third and sixth very little shorter than these; seventh about two lines shorter than the sixth; and the eighth and ninth diminish about as much; the second is equal to the ninth, and only six or seven lines shorter than the fourth and fifth. Their outer webs, from the third to the seventh inclusive, are sinuated, the latter, however, only very obliquely. The *tail* is long and cuneiform, the outer feathers being more than an inch shorter than the middle ones.

Dimensions of the *female*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	12	0	Length of the tarsus	1	3
„ of the tail	5	0	„ of the middle toe	0	10½
„ of the folded wing	4	1½	„ of its claw	0	4
„ of the bill along the ridge	1	1	„ of the hind toe	0	6
„ of the bill from the angle of the mouth	1	4	„ of its claw	0	6

The *male* is said to have a brighter orange tint on its plumage, broader white bands on the wing, and larger liver-coloured spots on the breast.—R.

The strong analogy which this and certain other species of *Orpheus* from South America, bear to such forms as *Pomatorhinus*, in the next sub-family of Thrushes (*Cratopodinæ*), is clearly indicated by the integrity of the bill, the upper mandible being entirely destitute of a notch: this relation of analogy has consequently been mistaken for one of affinity. Our *Orpheus longirostris**, which is a true Mocking-bird, in its surprising versatility of voice and powers of song, has lately been described, by the authors of the *Planches Coloriées*, as a new species, and referred to the genus *Pomatorhinus!* Nothing is more satisfactory than to have our views thus unintentionally confirmed, by those who are avowedly hostile to the very principles upon which they are founded. The greater curvature of the bill in *Orpheus longirostris*, is the only deviation it exhibits from the structure of *O. rufus*; the wings, tail, feet, tarsi, scutellation, *rictus*, nostrils, every other part, in short, is precisely the same. This supposed *Pomatorhinus*, moreover, is the Mocking-bird of Mexico; and, as the late Mr. Bullock, jun., informed us, is universally kept in cages, and highly valued for the sweetness and extraordinary variety of its notes. The genus *Orpheus*, like that of *Merula*, contains two most natural divisions; one having the throat and breast variegated by spots; the other destitute of these markings; the former, in the present group, is exemplified in *O. rufus*, while the latter, which is the pre-eminent typical form, is seen in *O. polyglottos* and *longirostris*. We do not consider the present bird as aberrant, otherwise than as representing *Merula* in its own genus, in the same way as *Orpheus meruloides*, to all appearance, typifies the Red-tailed Rock Thrushes (*Petrocincla*, Vig.), a group which we are disposed to consider as the Rasorial type of the family: again, we find this type represented, in the genus *Orpheus*, by the African White-crowned Thrushes with red tails; and all these are indisputable types of the Redstart

* Synopsis of the Birds of Mexico. Phil. Mag., June, 1827, No. 32, p. 368.

Warblers (*Phœnicura,* Sw.) Nothing can be more beautiful or wonderful than the manner in which Nature preserves her relations, amid the most astonishing variety, and the most extraordinary combinations.—S.

[41.] 3. ORPHEUS FELIVOX. (Swainson.) *The Cat-bird.*

GENUS, Orpheus? SWAINSON. (*Zool. Journ.*, iii., 167.)
Muscicapa Carolinensis. LINN., i., 328, No. 18.
Cat Fly-catcher. PENN. *Arct. Zool.*, ii., p. 388, No. 272.
Muscicapa Carolinensis. LATH. *Ind.*, ii. p. 483, sp. 64.
Turdus felivox. VIEILLOT. *Ois. de l'Am.*, ii., pl. 67, p. 10.
Cat-bird (*Turdus lividus*). WILSON, ii., p. 91, pl. 14, f. 3.
Turdus felivox. BONAP. *Syn.*, p. 75, No. 95.

The *Cat-bird,* so named from the strong resemblance which its voice bears to the plaintive mewing of a kitten, is common throughout the United States in summer, but does not appear to wander very far north. We did not observe it higher than the fifty-fourth parallel of latitude; and, as it is a very familiar bird, it is not probable that more than stray individuals could have visited the districts through which we travelled, without having attracted our notice. It winters on the confines of the Gulf of Mexico, arrives in Georgia towards the end of February, in the second week of April reaches Pennsylvania, and in the beginning of May it is seen in New England. It does not reach the banks of the Saskatchewan until the end of May, later than most of the other summer visitors. Wilson informs us, on the authority of the first settlers in the Genesee country, that the Cat-bird, in its migrations, keeps pace with the progress of agriculture, and that they had been several years in their new settlements before he made his appearance amongst them. The want of cultivation may probably be the barrier to his migrations northwards, and not the severity of the season; for the summer in the fur-countries is fine and warm. The country is more open about Carlton House, and cultivation is carried to a greater extent there than in any other part north of Lake Superior which we visited, and there only did we see the Cat-bird. We should expect to find it, however, in still greater numbers at the colony of

Osnaboyna, on the Red River, where the ground is now cultivated by several hundred settlers; and it would be highly interesting were any resident there to note the arrival of birds known to have a predilection for the vicinity of man, and previously strangers in that quarter.

The Cat-bird builds its nest in a bush or low thicket, forming the outside with small twigs, grass, and dry leaves, and lining it with black fibrous roots. The eggs are a little more than an inch long, and have a peculiar deep tint, intermediate between bluish-green and verdigris-green. In Pennsylvania two or three broods are raised in a season. Wilson, with his usual felicity, has drawn a vivid picture of the anxiety which this bird displays for the safety of its young. Its distress, when it supposes them to be in danger, is evinced by the most expressive gestures and loud cries. The same author tells us, that the male is one of the earliest of the Pennsylvanian songsters, beginning generally before the break of day, and hovering from bush to bush with great sprightliness, when there is scarcely light to distinguish him. His notes are more remarkable for singularity than for melody, and consist of short imitations of other birds and other sounds; but, his pipe being deficient in clearness and strength of tone, his imitations fail where these are requisite. He feeds principally on fruits.—R.

We place this species in the present genus, under the belief that it is an aberrant example; but its precise relations still require much study. We are at a loss to know why it should have the curious distinctions of bright rufous under tail coverts, an unspotted plumage, and a black head. It may, however, be remarked, that as the genus *Orpheus*, beyond all question, is one of the pre-eminent types of the whole family, so it is natural to expect it would contain representations of every other division or sub-family, even in the narrow confines of its own generic circle. That this suspicion has some foundation, we may observe, that our *Orpheus longirostris* typifies one of the sub-families; and we suspect that *O. felivox* represents the *Brachypodinæ;* for it is only in that group we find birds which are particularly marked by the bright colours of their under tail coverts. Many of these species, like the Cat-bird, throw themselves into the most violent and unusual agitations; their plumage, also, is never spotted. We have, moreover, in our Museum, a *Brachypus*, from Sumatra, apparently undescribed, which, with the exception of the rufous feathers, is clothed in the same coloured plumage as *O. felivox*, the whole bird being slate-grey, with the crown and tail black.—Sw.

DESCRIPTION

Of a *female*, killed at Carlton House, in July 1827.

Colour of the whole upper plumage blackish-grey, except the head and tail, which are pitch-black, and the inner webs of the quill feathers, which are blackish-brown. The cheeks, and the whole under surface of the body, with the wing linings, are deep bluish-grey; the under tail coverts brownish-red. The insides of the quill feathers are clove-brown, and the tail beneath is blackish-brown. The bill pitch-black, and the legs very dark umber-brown.

Form.—*Bill* compressed towards the point, with a rather acute ridge; cutting margin of the lower mandible slightly curved towards the point, and minutely notched on each side of its tip; there are some strong hairs at the angle of the mouth. The *wings* are short and round, being more than two inches shorter than the tail; the fifth quill feather is the longest; the fourth nearly equals it; the third and sixth are rather more than a line shorter; the seventh is a quarter of an inch shorter than the sixth; and the succeeding ones become gradually shorter, the tenth being nearly an inch shorter than the fifth; the second is equal to the eighth; and the first (or spurious feather) is scarcely half the length of the second, and more than an inch and a half shorter than the fifth. The outer webs, from the third to the sixth inclusive, are sinuated; the two last very obliquely. The tail is much rounded, the exterior feathers being ten lines shorter than the middle ones. The plumage of the body and head has the barbs very much detached.

The *male* differs very little from the female in the colours of its plumage; but in the *young* the red tint of the under tail coverts is scarcely discernible.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of			Length of the tarsi	1	1
the tail	9	2	,, of the middle toe	0	10
,, of the tail	4	0	,, of its claw	0	$3\frac{1}{2}$
,, of the folded wing	3	$7\frac{1}{2}$	,, of the hind toe	0	$4\frac{4}{8}$
,, of the bill along its ridge	0	$7\frac{1}{2}$	,, of the hind claw	0	4
,, of the bill from the angle of the mouth	0	$9\frac{1}{2}$			

FURTHER REMARKS ON THE ANALOGIES OF THE MERULIDÆ.

So many important and interesting considerations crowded upon our attention while investigating the natural affinities of this family, that, in our desire not to be diffuse, we have unintentionally omitted one of the most curious set of analogies belonging to the *Merulidæ*, and therefore too important to be passed over in silence. All systematists who have mentioned the *Brachypus* (*Chloropsis*) * *Malabaricus*, (Jardine and Selby,) or the *Verdin icterocéphale* of M. Temminck, describe it as having a filamentous tongue, and as sucking the nectar of flowers. This consideration, no doubt, influenced the intelligent authors of the *Illustrations of Ornithology* to refer this very beautiful group (which they have the undoubted merit of first characterising) to the *Meliphagidæ*.

Now even supposing that the *Chloropsides* (the true representatives of the *Pittæ*, among the *Merulidæ*,) are really nectarivorous, it by no means follows that their actual affinities lie among the *Meliphagidæ;* since groups which represent any given order or tribe in their own circle, invariably present us with some one or more characters indicative of such analogies; in many instances, indeed, these analogies are so strong, that the best zoologists have been deceived into the belief that they were real affinities. Nothing, perhaps, will illustrate this peculiarity better than a comparison of the *Merulidæ* with the tribe of *Tenuirostres*.

Sub-families of MERULIDÆ.	ANALOGIES.	Families of TENUIROSTRES. †
Merulinæ.	The most typical in their respective circles: wings, in the one (typically), strong and pointed, in the other feeble and rounded.	TROCHILIDÆ.
Myotherinæ.		CINNYRIDÆ.
Brachypodinæ.	Feet short, strong; hind toe much lengthened; wings and tail rounded.	MELIPHAGIDÆ.

* This is another striking instance of the defective information on systematic ornithology under which the authors of the *Planches Coloriées* appear to labour. In a recent number of their work we find this group given as new to science; whereas it had been named and characterised "*at least four years* before."—See Jardine and Selby's *Illustrations of Ornithology*, parts i. and vi.

† In merely intimating our idea, upon a former occasion (*Zool. Journ.*, i., 479), on the circular affinities of this tribe, we looked to the *Nectarinidæ* of Illiger as the subtypical group. Analysis has fully confirmed this view; but as the typical genus is *Cinnyris*, we now apply that name to the whole. There will be no danger of confounding the *Cinnyridæ* of Mr. Vigors with ours: the contents of the two groups are almost totally different.

Oriolinæ.	Bill stronger; frontal feathers soft and generally velvet-like; rictus smooth; feet short, robust; hind toe and tarsus of nearly equal length; tail short: frugivorous.	Paradiseadæ.
Crateropodinæ.	Bill greatly compressed, hard, both mandibles generally curved; tail lengthened, broad, graduated.	Promeropidæ.

The results of this comparison will explain many facts of the highest importance; since, if the analogies are *true*, we shall have no further doubts entertained about the situation of the Paradise-birds,—merely because our previous views on their true affinities* did not coincide with an arrangement founded, as we are told, *upon facts*. But let us look to these facts more closely. No two groups, in the whole circle of *Insessores*, can be much more unlike than these; we are only surprised, therefore, that their typical divisions possess any one character in common. The true Thrushes (*Merulæ*) agree, however, with the Humming-birds in taking both animal and vegetable food: we have repeatedly taken from the stomach of the latter, small dipterous insects, captured by these little birds in the flowers whose juices they also suck. The wings of both groups correspond in being long and pointed; whereas those of *Cinnyris* and *Pitta* are much shorter and considerably rounded: this analogy is even apparent in the disposition of their colours. The beautiful *Pitta cyanura*, Vieil., for instance, finds its representative in the *Cinnyris Senegalensis*. Both are lineated on all their under parts with narrow lines of brilliant violet. But these analogies, after all, are very faint, and are merely touched upon to shew that the typical groups (generally more distant from each other than are the aberrant) do not absolutely disagree.

On proceeding to the next point of comparison,—that between the *Brachypodinæ* and the *Meliphagidæ*,—the value of this table begins to be apparent, since we immediately perceive the true relation between *Chloropsis* and the Australian Honey-suckers to be one of analogy, and not of affinity. Yet setting aside this table, and merely looking to the immediate affinities of *Chloropsis* in its own circle, we see that the Honey-suckers could not be introduced among the *Brachypodinæ* without the greatest possible violation of nature; while, on the other hand, *Chloropsis* would appear equally excluded from the *Meliphagidæ*, whose circular

* See *Zool. Journ.*, i., p. 479; and *Linn. Trans.*, vol. xiv., p. 465, *note*.

succession of types *has been represented as complete* *: what degree of confidence may be attached to this latter arrangement we shall not now stop to inquire. That the Paradise-birds represent the *Orioles* might be inferred from the fact, that Linnæus and many other writers have actually placed the Paradise *Oriole* in the genus *Paradisea*, under the name of *Paradisea aurea*. But we have much better evidence for this analogy. M. Lesson, one of the most enterprising voyagers and the most zealous naturalists of France, has the enviable honour of being the only scientific ornithologist who has contemplated these magnificent birds in a state of nature. His testimony, uninfluenced by theory, is consequently of the first importance. He distinctly informs us, in his valuable little *Manuel d'Ornithologie*, i., p. 387, that the true Paradise-birds derive their chief, if not their only subsistence from soft fruits †; thus preserving their direct analogy not only to the *Oriolinæ*, but to the *Ampelidæ*, the *Musophagidæ*, the *Ceblepyrinæ*, the *Icterinæ*, and other analogical types of the *Tenuirostres*.

Let us now look to the *Crateropodinæ* with reference to the *Promeropidæ*. In both these groups the bill is peculiarly hard, slender, and unusually compressed; both have tails longer, softer, and more cuneated than any other birds in their respective circles; and both appear to frequent humid and watery situations‡. So perfect, in short, is this analogy, that our friend Sir W. Jardine, Bart., is in possession of an African bird, belonging to the *Crateropodinæ*, which might be very easily taken for a *Promerops;* and it is still a matter of doubt to which of these groups the rare *Upupa Capensis*, Pl. Enl. 697, (a bird we have not yet seen) may truly belong.

* "The group we have selected as representing the *Meliphaga* of Lewin and authors is the only assemblage of these birds of which we can speak with any satisfaction to ourselves. They *exhibit five prominent modifications of form*, according to the variation chiefly of the characters of the bill and tail."—The *Meliphaga fulvifrons* "is placed at that extreme of the section which joins the first subdivision, *and completes the circular succession of the whole group*."—*Linn. Trans.*, vol. xv., pp. 313, 318.

† "Il aime à se tenir sur les arbres de teck,—et dont *le petit fruit forme sa nourriture*. Il ne se perche communément que sur le sommet des plus grande arbres. Lorsqu'il en descend, *c'est pour manger les fruits* de quelques arbres moyens." "Pour chasser les Oiseaux de Paradis, les voyageurs doivent se rappeler qu'il est nécessaire de partir dès le matin du navire, d'arriver au pied de l'arbre de teck, ou du figuier, que ces oiseaux recherchent *à cause de leur fruit*." p. 390. "Le Paradisier petit émeraude," continues M. Lesson, "mange sans doute de plusieurs substances dans son état de liberté:" but what these may be, besides fruits, he does not appear to have discovered, since he only vouches, in short, for that particular fact which we are now applying. "*Je puis affirmer*," continues M. Lesson, "*qu'il vit de grains de teck, et d'un fruit nommé anuhou, de saveur fade et mucilagineuse, de la grosseur d'une petite figue d'Europe*, et qui appartient à un arbre du genre *Ficus*."—*Manuel d'Orn.*, p. 390.

As the *Tenuirostres* will not again be mentioned, we take this opportunity of correcting our views on the situation of the magnificent *Ptiloris Paradiseus*, Sw., suspected by us to be an aberrant form of the *Meliphagidæ:* it more properly represents the Scansorial type of the *Paradiseadæ*.—Sw.

‡ See *Burchell's Travels*, i., p. 326; ii., p. 346.

The real affinities, therefore, of *Chloropsis* thus appear to lie with the *Brachypodinæ;* and should these birds really possess a suctorial tongue, the analogy is only rendered more beautiful. That this kind of tongue also should disappear in the *Paradiseadæ,* the *most* aberrant group of the *Tenuirostres,* is what we should naturally expect, as in perfect unison with those principles of variation observed throughout every group in Ornithology.

We must now glance at these two important, but very unequal divisions, under other points of view. First, their resemblance illustrates the following idea, expressed by Mr. Mac Leay:—"We are struck with the analogy which opposite points of the same circle bear to one another,—an analogy sometimes so strong, that it has been mistaken for a relation of affinity; and indeed I am still unable to state whether this be not the fact, and that the opposite points of the curve, if I may so express myself, do not meet each other."—"It will be sufficient to state, however, that as this peculiarity of natural distribution was detected by analysis, and the use to be made of it was visible among the *Petalocera;* so the discovery of it served to prevent my falling into several mistakes, which I could not otherwise have avoided, in deciding between relations of analogy and affinity as they exist in the more general groups."—*Horæ Entom.*, p. 319. In this passage we trace an indistinct perception of *other properties* of natural groups than those which this talented writer had discovered and explained.

Now this strong resemblance between opposite points of a circle is universal, but of two very different natures. In the present case it is clearly analogical, for not only are the two groups vastly unequal, but the *Dentirostres* (which includes the *Brachypodinæ*) is a typical tribe, while that of the *Tenuirostres* is the most aberrant. But if we take the opposite points of the order *Insessores,* on the other sides of the curve, we have the *Fissirostres* and the *Scansores;* and *this* resemblance we consider as one of absolute affinity: both these tribes, in fact, are aberrant, and of equal rank, and both, in our opinion, by being actually united, divide the *Insessores* into three great primary circles.

Lastly, a few words may be added on the analogies of the *Brachypodinæ* and the *Crateropodinæ,* which, as we have already shewn, appear to be twofold. Viewing the aberrant groups of the *Merulidæ* and of the *Tenuirostres,* with reference to the aberrant tribes of the *Insessores,* we find they represent each other in this manner

MERULIDÆ.	TENUIROSTRES.	INSESSORES.
Brachypodinæ	MELIPHAGIDÆ	SCANSORES.
Oriolinæ	PARADISEADÆ	TENUIROSTRES.
Crateropodinæ	PROMEROPIDÆ	FISSIROSTRES.

The largest birds in creation, as the Ostrich and the Cassowary, belong to the *Rasores*, which order, among the perching tribes, is represented by the *Scansores:* yet, if the situation of the *Struthionidæ*, as it has been stated, is aberrant in its own order, it will then be that particular family which is analogous to the *Fissirostres**. Hence we may account for the *Crateropodinæ* and the *Promeropidæ* being the largest birds of their respective groups, since both in like manner represent the *Fissirostres*. Now this is almost placed beyond doubt; for the *Promeropidæ* pass into the *Fissirostres;* while the *Meliphagidæ*, being at the opposite curve of the Tenuirostral circle, should consequently represent the *Scansores*. This they accordingly do, by the great length of their hind toe, and by actually passing into that tribe. Even this, however, will not destroy the obvious analogy which the *Crateropodinæ* also bear to the *Rasores*, and consequently to the *Scansores:* but this double resemblance will rather convince us that the doctrine of analogy, as yet, has been most imperfectly developed.

* The Hornbills among the *Conirostres*, the Toucans in the tribe of *Scansores*, and the *Saxicolinæ* or Stone-chats in the family of *Sylviadæ*, comprehend in like manner the largest birds in their respective circles: and all these groups are analogous to the *Fissirostres*. This very remarkable property in natural arrangement is not, however, universal. The greatest birds in the tribe of *Dentirostres* are found among the *Ampelidæ*, which family represents the *Tenuirostres*. So also in the family of *Laniadæ*, where *Ceblepyrinæ*, having the same relation, exceed in size all other Shrikes.—Sw.

SYLVIADÆ.

The preceding digressions on the natural arrangement of those two important families, the *Laniadæ* and the *Merulidæ*, have occupied so much space, that our observations on the remaining groups of the *Insessores* must be restricted to results, leaving the facts upon which they repose to be stated on some future occasion. In treating of the *Sylviadæ*, we more particularly regret this necessity for abridgment. No group in the whole circle of Ornithology, as confessed by all writers, is in such a chaotic state of confusion; yet no group throughout nature that has yet been analyzed, offers a more perfect demonstration of the trinary system of distribution than his. This subject, as assuming such an important aspect, will be more fully discussed in another work*, now nearly ready for the press.

The *Sylviadæ*, or Warblers, may be also termed Ambulating Flycatchers; since, when viewed collectively, they are only separated from the *Muscicapinæ* by a different mode of feeding, indicated by the superior length and structure of their feet: these members, in the *Sylviadæ*, are adapted for constant locomotion, either among branches, or upon the ground; whereas, in the true Flycatchers, the feet are short, small, and feeble, corresponding to the sedentary habits of those birds. Comparing the Warblers, on the other hand, with the Thrushes, we see that the best distinction between the two groups lies in the very character which assimilates the *Sylviadæ* to the Flycatchers, namely, the basal depression of the bill. We allude, of course, to typical examples; since all these distinctions are softened down, in proportion as the three groups approximate.

A careful analysis of this family will show it is composed of three primary circles, each returning into itself. One of these embraces the three aberrant sub-families, the two others constituting the typical and the sub-typical sub-families, as follows:—

SYLVIADÆ.

1. *Typical group.*	Bill very slender, suddenly compressed beyond the base; stature very small.	Sylvianæ.
2. *Sub-typical group.*	Bill stronger, gradually compressed beyond the base; stature more robust.	Philomelinæ.
Aberrant group.	Feet more especially adapted for one particular purpose, either for walking, running, or climbing.	Saxicolinæ. Motacillinæ. Parianæ.

* *An Encyclopædia of Zoology*, one thick octavo volume, with numerous wood-cuts.

In offering the foregoing characters as distinctions of the three primary divisions, the ornithologist will bear in mind the difficulty of defining differences between groups so closely united by imperceptible gradations in their aberrant forms. It may, however, be observed, that the true *Sylviadæ* are the most perfectly organized, since they not only search for their food, like the Nightingales *(Philomelinæ)*, among boughs and trees,—catch insects upon the wing, like Flycatchers, but are frequently seen on the ground, upon which they move with perfect facility *. From the subtypical group the fly-catching habits seem to be withheld; and, on proceeding to the aberrant group, we find a still further diminution in the powers of locomotion; they are less varied, but more concentrated. The *Saxicolinæ* walk, but do not explore trees, or habitually catch insects on the wing from a fixed station. The *Motacillinæ* rarely perch, and never climb, yet they run with amazing celerity. The *Parianæ*, again, are excluded from the ground, and from capturing winged insects, yet they excel all others of their family in climbing among branches. The genus *Sylvicola*, Sw., standing intermediate between the true Titmice and the typical *Sylvianæ*, present us, of course, with a union of both habits. All these modes of progression are distinctly indicated by a corresponding variation in the structure of the feet.

We shall shortly notice the principal forms which enter into these groups. The first, or typical circle, is marked by the following genera:—*Sylvia*, L.; *Malurus*, Vieil.; *Prinea*, Horsf.; *Hylïota*, Sw.; and *Culicivora*, Sw. The second, or sub-typical, is indicated by *Synallaxis?* Vieil.; *Curruca*, Bech.; *Philomela*, Antiq.; *Phœnicura*, Sw.; and *Thamnobia*, Sw.; but the affinities of this latter group are by no means certain. In regard to the third, or aberrant division, the ornithologist will immediately perceive the union of the *Saxicolinæ* with the *Parianæ*, by looking to the following birds, having before him our well-known Robin, as one of the first links in the chain:—*Petroïca multicolor*, Sw. † *P. Lathami*, Sw. ‡ *Setophaga* (*Erythrosoma*) *picta* §, Sw. *S.* (*E.*) *miniata*, Sw. ‖, and *Setophaga ruticilla*, Sw.

From the three primary divisions thus indicated, we proceed to the sub-families, in which we have a perfect representation of the five principal groups of the *Merulidæ*. We shall, however, get a more accurate notion of the whole family, by comparing it with the tribes of the *Insessores*.

* This fact, in reference to the *Sylvia hippolais*, we have had frequent opportunities of observing in our own garden, where the species is very common.—Sw.

† Zoological Illustrations, second series, pl. 36.

‡ Muscicapa Lathami, Vig., Lin. Trans., vol. xv., p. 205.

§ Zool. Ill., second series, pl. 2.

‖ Synop. of Mexican Birds, No. 18.

Tribes of Insessores.	Analogies.	Sub-families of Sylviadæ.	Typical Genera.
Conirostres .	Bill much compressed; feet adapted both for walking and perching; wings lengthened.	*Sylvianæ.*	Sylvia.
Dentirostres .	Bill stronger, notch more distant; wings more rounded; claws larger, very acute.	*Philomelinæ.*	Philomela.
Fissirostres .	Bill depressed, bristled at the base.	*Saxicolinæ.*	Saxicola.
Tenuirostres .	Bill very slender; rictus smooth.	*Motacillinæ.*	Motacilla.
Scansores .	Bill entire, or nearly so; hind toe lengthened.	*Parianæ.*	Parus.

On duly investigating this table, the ornithologist will detect many relations of peculiar interest, which we cannot at present dwell upon. The two first, indeed, are so faint, in comparison with the three last, that we do not feel perfectly sure whether—having now traversed over one half of the Dentirostral circle,—the analogies of the typical groups are not reversed; in other words, whether the *Philomelinæ* do not represent the *Conirostres* through the medium of the *Merulinæ;* and the *Sylvianæ* the *Dentirostres* through the medium of the *Myotherinæ;* but this will not in the least affect the progression of the affinities as here exhibited.

It will be sufficient, for our present purpose, to intimate the probable situation of such species as are subsequently described. It is singular that in the sub-family of

SAXICOLINÆ,

only one form has hitherto been discovered in the whole extent of America; this is typically represented by the well-known "Blue bird" of Wilson, the *Sialia Wilsonii* of our Mexican Synopsis. Another species, our *Sialia Mexicana**, is found on the table land of Mexico; and a third, still more distinct, was first discovered in these expeditions. The intimate connexion between this group and our European Robin, must be so evident to all who have perused the pages of Wilson, that we are justified in viewing it as a sub-genus, or the American type of *Erythaca*, Sw.; the Australian form is given in *Petroïca*, Sw.; the African

* Sialia *Mexicana*, Sw.—Size of *S. arctica;* upper plumage bright purple-blue, chin and throat the same; across the breast a rufous band, which colour is continued on the sides and flanks; middle of the body, vent, and under tail covers light-blue, inclining to white. Total length 6½, wings 4½, tarsi ¾, tail 3 inches. Inhabits Mexico. In Mr. Taylor's collection.

is probably the *Muscicapa stellata*, Vieil.; and the *Muscicapa longipes* of M. Lesson, seems to be the Oceanic form. The genus, thus indicated, stands aberrant in its own sub-family, and appears to be the *Fissirostral* type of the *Saxicolinæ*. But as the sub-genera require much more study than we have yet had the means of bestowing upon them, we rather wish the above series to be looked on as questionable, or at least as unsupported by analogical demonstration.

Of the next aberrant division, comprising the

MOTACILLINÆ,

or Wagtails, America is equally destitute; while the group itself is so deficient in species, that its internal affinities are very obscure. The situation of *Anthus*, indeed, is perfectly evident; it is the Tenuirostral type, and leads immediately to *Alauda;* but that of *Seïurus* is particularly perplexing: it may, in fact, be questioned, whether its precise situation is not on the confines of the *next*, rather than of *this* sub-family. Be this as it may, the affinity of the two divisions is rendered unquestionable, by comparing the short-clawed *Anthi* with *Seïurus aquaticus*, and *Seïurus aurocapillus* with *Accentor*. The fissirostral type of the *Motacillinæ*, hitherto undiscovered, will clear up much of this uncertainty.

The next and last aberrant division, comprising the

PARIANÆ,

is one of most peculiar interest, not only to the American ornithologist, as containing nearly all the beautiful little warblers of that continent, but to the more philosophic investigator of the natural system. This division, in fact, is the most numerous, and consequently the most varied of the whole family; it accordingly offers the best field for the investigation of those principles of natural arrangement upon which our peculiar views are founded. Its internal arrangement may be thus stated :—

		Genera.	Analogies.
1. *Typical group.*	Bill short, strong, conic, entire .	*Parus.*	Conirostres.
2. *Sub-typical group.*	Bill more lengthened, and slender, sub-conic, entire, or obsoletely notched.	*Sylvicola.*	Dentirostres.
3. *Aberrant group.*	Feet more especially adapted either for perching, walking, or climbing; bill various.	*Setophaga.*	Fissirostres.
		Trichas.	Tenuirostres.
		Accentor.	Scansores.

Here again we have the aberrant groups united by such birds as *Setophaga rubra*, Sw.*, where the form of the bill is completely that of an *Accentor*, joined to the remarkable and otherwise inexplicable character of a strongly-bristled rictus. The analogies of the whole group are highly interesting, both in reference to the external anatomy, and to the habits and economy of the living birds.

Contracting the sphere of our inquiries, we shall select, for further analysis, the genus

SYLVICOLA, Sw.,

as a group which more particularly regards the Warblers of North America. Here again we find three divisions, typically distinguished by the following peculiarities :—

		Sub-genera.
1. *Typical group.*	Bill entire, acute, pointed, sub-conic .	*Vermivora*, Sw.
2. *Sub-typical group.*	Bill obsoletely notched, slightly bent .	*Sylvicola*, Sw.
3. *Aberrant group.*	Hind toe much stronger, and more lengthened; bill various . . .	*Dumecola*, Sw. *Zosterops*, H. and V. *Mniotilta*, Vieil.

The paucity of species in the two extreme aberrant types, viz., *Dumecola* and *Mniotilta*, prevents us, at present, from knowing in what way they may be united. We shall therefore state the affinities and analogies of the whole group more in detail. The typical distinctions of the entire genus

SYLVICOLA

consists in the bill being lengthened-conic, either entire, or slightly notched remotely from the tip of the upper mandible, which is scarcely deflexed; wings pointed, the first quill nearly as long as the second.

The circular union of these groups must be explained more fully in another place; for the present it is sufficient to state, that Wilson, more than twenty years ago, clearly pointed out in what manner the worm-eating Warblers (*Vermivoræ*) differed from the true *Sylvicolæ*, with which, nevertheless, all subsequent writers have continued to blend them†. As yet we have actually seen but one species of *Dumecola*, although we strongly suspect the *Musicapa diops*, Pl. Col. 144, f. 1, is

* Synop. of Mexican Birds, No. 19.

† These birds have recently, indeed, been erroneously placed with the sub-genus *Dacnis*, belonging to the *Cinnyridæ*. This resemblance between the two groups is certainly strong, but it is only analogical.—Sw.

another, connecting this form with *Zosterops*. The affinity of these white-ringed Warblers to the *Sylvicolæ*, we pointed out in characterizing the latter group*. Finally, the *Mniotilta pinus*, Sw., or Pine Warbler of Wilson, so completely resembles the *Vermivora solitaria*, Sw., that several authors have actually mistaken the one species for the other †.

Let us now look to the analogies of this singular group.

CONIROSTRES	Bill lengthened, conic, entire; rictus nearly smooth	*Vermivora.*
DENTIROSTES	Bill notched, somewhat remotely from the tip; rictus bristled	*Sylvicola.*
FISSIROSTRES	Bill depressed; feet weak	*Dumecola.*
TENUIROSTRES	Bill subulate towards the end; rictus smooth	*Zosterops.*
SCANSORES	Feet scansorial; hind toe and claw much lengthened	*Mniotilta.*

In these five types of form, being the first assemblages of species—in other words, the lowest denomination of groups in nature,—we have a typical representation of every division in the whole class of AVES. It was no doubt the very conic and sharp-pointed bills of the *Vermivoræ* which induced M. Cuvier to think they connected the Warblers with the *Conirostres*, by means of *Icterus*. The remote notch and the bristled rictus are both characters common to a Shrike and a *Sylvicola;* and that the type of this form should have been ranked by Linnæus as a *Parus*, is immediately understood by that genus representing *Sylvicola* in its own circle. *Dumecola ruficauda*, Sw., would pass for a Flycatcher, if its feet and wings were not examined. The analogy between *Zosterops* and the *Tenuirostres* is so perfect and beautiful, as to have deceived such accurate observers as MM. Cuvier, Vieillot, Temminck, and Lesson. The *Diceum choronotos*, or *Grimpereau de l'Ile de Bourbon*, Pl. Enl. 681, 2, of these eminent naturalists, is, in fact, a true *Zosterops*, and probably the type of the group. *Sylvia Javanica* is a second, and several others have been also placed in the genus *Diceum*. In characterizing the sub-genus *Oxyglossus* (not being aware it had previously received the name of *Mniotilta*), we ourselves fell into the error of referring it to the scansorial creepers. In this we were principally influenced by the example of M. Cuvier, who ranks the *Mniotilta varia* as a *Nectarinia*. These relations, however, as well as every other cited, while they establish the correctness of the above table of representatives in the fullest manner, are nothing more than so many instances of analogy.

* *Zool. Journ.*, iii., p. 169. † See *Bonaparte's Observ. on Wilson's Nomenclature;* article *Sylvia solitaria.*

We have already, while discussing the relations of the *Thamnophilinæ* with the *Myotherinæ*, adverted to that singular property, belonging to typical groups in contiguous circles, of uniting by collateral affinity, without destroying those circular affinities by which their own respective circles are described. We have had proofs of this change of analogies into affinities in the families of *Laniadæ* and *Merulidæ;* and we see it, if possible, more strongly exemplified in the group now under consideration. The genus *Sylvicola* describes its own circle by the types here enumerated, without the intervention of *Setophaga*, which is the next group, and of equal rank. Yet the *typical Sylvicolæ* are so beautifully connected to the typical *Setophagæ*, without the intervention of the aberrant forms in either group, that it is impossible to imagine a single deficiency in the links which connect them. We call the attention of ornithologists to this most remarkable fact, which may be gathered from the invaluable pages of Wilson, detailing their manners, and by a minute examination of the birds which we shall subsequently notice. The genus

SETOPHAGA, Sw.,

as being almost exclusively a North American group, may be here slightly mentioned. As this is the Fissirostral type of the *Parianæ*, we can feel no surprise at its having been blended with the genuine Fly-catchers, from which it can only be distinguished by the different structure of its wings and feet: it is represented, among the genuine *Muscicapinæ*, by the sub-genus *Rhipidura*, H. and V. The species yet discovered are not many, and these differ in so remarkable a manner, that the principle of their variation can never be explained or rightly understood, without reference to the numerous affinities which this group is evidently intended to reconcile. On one side it is to connect *Sylvicola* with *Trichas*, on another it is to unite the *Parianæ* with the *Sylvianæ*, and on a third it passes into *Petroïca;* and thus effects the union of the *Parianæ* and the *Saxicolinæ*. It should likewise contain species which would shew an approximation to *Accentor*, and thus indicate the union of the three aberrant genera of its own sub-family. Now all these complicated relations may be traced in the species we already know; and yet there is one form,—the aberrant type leading to the sub-genus *Dumicola*,—which is yet undiscovered; and this, theoretically, might be supposed to be the very one which was most essential to establish the affinity of the two genera.

We must pass over the three remaining groups of this sub-family, namely, *Trichas*, *Accentor*, and *Parus*, and close our remarks with a few cursory observations on the

SYLVIANÆ,

or typical sub-family, whose circular affinities are explained by the following genera:—

		Genera.
1. *Typical group.*	Bill compressed, rather lengthened and straight, notched; legs moderate.	*Sylvia*, Auct.
2. *Sub-typical group.*	Bill shorter, more curved, nearly entire; legs long.	*Malurus*. Vieil.*
3. *Aberrant group.*	Bill variously shaped; hind toe stronger.	*Prinea*, Horsf. *Hyliota?* Sw. *Culicivora*, Sw.

The passage from *Setophaga* to the typical Gold-crested Warblers is marked by the genus *Culicivora*, where one half of the bill is *depressed*, and the other *compressed;* a singular union of the characters respectively belonging to each. We were long in doubt as to the mode in which the aberrant circle was closed, until our friend Dr. Horsfield very recently communicated to us a new species of *Prinea* from India, having the depressed Fly-catcher-like bill of the American *Culicivoræ*, with the rictus strongly bristled! On the situation of these two genera, indeed, there can be no doubt,—the one representing the *Scansores*, the other the *Fissirostres;* but of *Hyliota* we know only two species; and until the circular affinities of the genera immediately conterminous have been made out, we look on this point of the series as by no means perfect.

The only material point which will detain us, as connected with the affinities of this division, regards the genus *Troglodytes*. Modern naturalists generally consider these as Scansorial birds: not, indeed, from a partial consideration of the solitary example found in Europe, but from looking to the general affinities and habits of the whole group. The correctness of this opinion has more recently been denied, upon the ground that the tongue of the Carolina Wren is like that of a *Certhia;* while the tongue of the winter Wren places it with the *Sylviadæ*. Now, admitting this to be true; admitting also that the European *Troglodytes does not* use its tongue to seize its insect food, what does the whole amount to?

* The beautiful development of tail, seen in this group, might lead us to suspect it to be the Rasorial type of the *Sylvianæ;* and as its contents have not yet been analyzed, there may still be room for doubt. On the other hand, it must be premised, that the genera, thus arranged, accurately represent the sub-families of the *Merulidæ*,—a fact which may be gathered by comparing this table with those at page 152. We can form no well-grounded opinion on the precise station of the beautiful little Emu bird of Australia: its situation, either with *Malurus* or *Prinea*, depends entirely on the analysis of these two groups.—Sw.

—an affinity or an analogy? Simply, as we conceive, the latter. The analogy between *Sylvia* and *Troglodytes*, indeed, is very strong, but not more so than that between *Chloropsis* and *Meliphaga*, already illustrated. We see no reason, therefore, to believe that part of the Wrens belong to the *Scansores* and part to the *Sylviadæ;* still less for supposing that the two groups, by these birds, are brought together, and consequently *meet* *. The most unanswerable proof, however, which can be brought forward against this idea (resting, indeed, upon partial reasoning only), is derived from comparing the analogies of the following groups:—

Families of Scansores.	ANALOGIES.	Genera of Sylvianæ.
Picidæ	Typical in their respective circles; tail feathers pointed . .	*Sylvia.*
Psittacidæ . .	Bill shorter, curved from the base	*Malurus.*
Ramphastidæ .	Representing the Fissirostres in their respective circles . .	*Culicivora.*
Cuculidæ . . .	Wings long, pointed	*Hyliota?*
Certhiadæ . .	Hind toe lengthened; bill compressed, entire; *rictus* smooth .	*Prinea.*

Troglodytes (as forming a part of the *Certhiadæ*) is thus represented by *Prinea* and *Orthotomus*, Horsf.; and this analogy at once accounts for these three forms having been supposed to enter among the Scansorial creepers. In drawing up this table, we again see the groups in the *Sylviadæ* partially transposed, since *Sylvia*, and not *Malurus*, unites to *Culicivora:* yet we cannot discover that this originates in any defect in this view of their real affinities. On comparing this group, however, with the *Merulidæ*, we find that *Prinea* obviously represents the *Crateropodinæ*, and *Culicivora* the *Brachypodinæ*, both of which, as we have already seen, possess *double* analogies to the Insessorial orders of *Scansores* and *Fissirostres*.

On the last sub-family of the

PHILOMELINÆ,

typically represented by the true Nightingale, we must not dwell, since there does not appear to be one species found in Northern America.

* "We may observe these two groups to be placed in opposite stations in the general circle of affinity, and *may add this instance* to many others, where groups similarly circumstanced *are found to meet.*"—*Linn. Trans.*, xiv., p. 441.

SIALIA ARCTICA.

London. Printed for John Murray. Bow street to the Admiralty. January 1st. 1829.

[44.] 1. Erythaca (Sialia) arctica. (Swainson.) *The Arctic Blue-bird.*

Genus, Erythaca. *Sub-genus*, Sialia, Swainson.

Ch. Sp. Erythaca (Sialia) arctica, *cyanea, subtus azurea, crisso versus albescens.*
Sp. Ch. The Arctic Blue-bird, ultramarine-blue above, greenish-blue beneath, whitish on the posterior part of the belly and under tail coverts.

Plate xxxix.

The only specimen that we procured of this beautiful bird was shot at Fort Franklin, in July, 1825. It is merely a summer visitor to the fur-countries; and we obtained no information respecting its habits.

DESCRIPTION

Of a specimen killed at Great Bear Lake, lat. 64½°, July, 1825.

Colour of the dorsal aspect ultramarine-blue; the webs of the tertiaries and the tips and inner margins of the quill and tail feathers dull umber-brown; the base of the plumage blackish-grey. *Under surface.* The cheeks, throat, breast, and insides of the wings greenish-blue, fading, on the abdomen, to greyish-blue. Vent feathers and under tail coverts white. *Tail* beneath and insides of the quill feathers clove-brown, with a strong tinge of blue. *Bill* and *feet* pitch-black.

Form, in general, that of *E. Wilsonii;* but the *bill* is considerably narrower at the base, and proportionably longer, straighter, more faintly notched, and less bent at the tip of the upper mandible: its breadth is equal to its depth. *Wings* three-quarters of an inch shorter than the tail. The second quill feather is the longest; the first and third are equal, and about a line shorter *; the tenth is an inch and a half shorter than the second. *Tail* forked or deeply emarginated, the central feathers being more than half an inch shorter than the exterior ones. *Legs* and *feet* similarly formed with those of *E. Wilsonii.*

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	7	9	Length of the bill on its ridge	0	6
,, of the tail	2	9	,, of the tarsus	0	10
,, of the folded wing	4	4	,, of the middle toe	0	7½
,, of the bill, from the angle of the mouth	0	8	,, of the middle nail	0	2
			,, of the hind toe	0	4
			,, of the hind nail	0	3

* The relative lengths of the quill feathers are the same with those of a young specimen of *E. Wilsonii*, described in the following page.

[45.] 2. Erythaca (Sialia) Wilsonii. (Swainson.) *Common Blue-bird.*

Genus, Erythaca. *Sub-genus*, Sialia, Swainson.
The Blue Redbreast (*Rubecula dorso cæruleo*). Edwards, pl. 24.
Motacilla Sialis. Linn.
The Blue-backed Redbreast. Penn. *Arct. Zool.*, ii., p. 298, No. 281.
The Blue-bird. Wilson, i., p. 56, pl. 3, f. 5. Male.
Oenanthe sialis. Vieillot.
Saxicola sialis. Bonap. *Syn.*, p. 89, No. 143.
Sialia Wilsonii. Swains. *Zool. Journ.*, iii., p. 173.

This richly-coloured bird, which has all the familiarity of the English Redbreast, without its pugnacious disposition, is a great favourite in America, where it is customary to fix up boxes in the farm-yards and gardens for its accommodation. A few individuals winter in the southern States, and some remain in the western territories all the year, in as high a latitude as $41\frac{1}{4}°$; but greater numbers seek a southern retreat in winter. Should the weather in February be open, the Blue-bird is occasionally seen in Pennsylvania; but it is not until the middle of March that he is observed, with his mate, reconnoitring the condition of his old breeding-places. He is found in the summer throughout North America to the eastward, and perhaps to the westward, of the Rocky Mountains, up to the forty-eighth parallel of latitude, beyond which he was not seen by the Expedition. On the approach of winter he moves to the southward, but does not entirely leave Pennsylvania till the middle or end of November. He feeds in summer on coleopterous insects, spiders, &c., and in the autumn on berries of various kinds. His song is an agreeable warble, which at the close of the season changes to a single plaintive note. The nest is built in the hole of a tree, or in a box erected on purpose. The female lays five or six eggs, of a bluish-green colour, and brings forth two or three broods in a season, the male assisting her in rearing the young. The eggs measure $1\frac{1}{20}$ of an inch in length.

DESCRIPTION

Of a specimen, procured at Penetanguishene.

Colour of the whole upper plumage intermediate between azure and china-blue (a considerably darker hue than that of *Sialia arctica*). Shafts of the quills and tail dull umber-brown. *Under surface.*—Throat, neck, breast, and flanks bright orange-brown. Belly and vent white. *Tail* beneath flax-flower blue. *Bill* and *legs* pitch-black.

Form, &c.—Typical. *Wings* pointed. First quill longest, second and third scarcely shorter, fourth about two lines shorter; secondaries truncated and notched at the end. *Tail* slightly forked, the middle feathers being more than a quarter of an inch shorter than the outer ones. *Tarsus* protected by a single entire scale, having a longitudinal fold on each side; the tarsal joint covered anteriorly by three transverse scales. The lateral *toes* are equal to each other and considerably shorter than the middle one. The outer nail is the smallest. The hind toe is the shortest, but most robust, and it has the largest claw.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	7	0	Length of the middle toe	0	$8\frac{1}{2}$
,, of the tail	2	8	,, of its claw	0	2
,, of the longest quill feather	3	6	,, of the hind toe	0	$4\frac{1}{2}$
,, of the tarsus	0	10	,, of its claw	0	3

DESCRIPTION

Of a *young bird*, in Mr. Swainson's collection, killed near Philadelphia.

Colour of the upper aspect of the head dark broccoli-brown. The back of the neck, scapularies, interscapularies, and lesser wing coverts present the same colour, the tips having a darker tint, with a greyish-white oval mark on each shaft; back and rump lavender-purple. A dark-blue feather among the scapularies, and another on the rump, shew that the specimen was assuming its perfect plumage when killed. The exterior webs of the quill and tail feathers have a brilliant china-blue colour, approaching to ultramarine, their tips blackish. *Under plumage* pale ash-grey, edged on the throat, breast, and flanks with yellowish-brown. The brown borders are broadest on the sides of the neck.

[46.] 1. Sylvicola æstiva. (Swainson.) *Citron Warbler.*

Sub-family, Parianæ. Swainson. *Genus*, Sylvicola. Sw.
Le Figuer de Canada. Brisson. *Orn.*, iii., p. 492, No. 21, pl. 26, f. 3.
Le Figuer de la Caroline. Buffon. *Pl. Enl.* 56, f. 1. Female.
Le Figuer de Canada. Idem, 56, f. 2. Male.
Yellow-poll Warbler. Penn. *Arct. Zool.*, ii., p. 402, No. 292. Male.
Olive Warbler. Idem, p. 409, No. 307. Female.
Blue-eyed Yellow Warbler (*Sylvia citrinella*). Wilson, ii., p. 111, pl. 15, f. 6.
Sylvia æstiva. Sabine. *Franklin's Journ.*, p. 674; Bonap. *Syn.*, p. 83, No. 122.
Oosowow-peetheesees (*Small Yellow-bird*). Cree Indians.

This species is known throughout the whole of the fur-countries, as far north as the woods extend, or to the sixty-eighth parallel of latitude; and being a

familiar and shewy little bird, has attracted the attention of the natives to such a degree as to have obtained a specific appellation,—a distinction which is seldom conferred by them on birds of so small a size. It winters towards the tropics, and arrives in Pennsylvania about the beginning of May, where some pairs remain to breed, while others advance to the north as fast as the progress of summer prepares the country for their reception. It reaches the banks of the Saskatchewan about the third week in May, and the borders of Great Bear Lake, in the sixty-fifth parallel, in the beginning of June, soon after the snow has disappeared, but before the rivers break up. It retreats, with its young brood, from the fur-countries in the beginning of September, and from Pennsylvania by the middle of that month. It is commonly seen in the low thickets which spring up where the trees have been cut down in the neighbourhood of the fur posts, and is very active, flying continually from bush to bush, and destroying great numbers of the caterpillars which harbour on willows. Its notes are soft and pleasing, though without compass or variety. It builds its nest near the ground, in a bush or in the fork of a low tree, of grass, very compactly woven, and lined with hair and down. Its eggs, five in number, are of a greenish-white colour, with crowded blotches of dark umber-brown at the thick end, mixed with a few subdued spots of purplish-grey. The length of an egg is $1\frac{7}{10}$ inch.

DESCRIPTION

Of a *male*, killed on the banks of the Saskatchewan, May 25, 1827.

Colour of the dorsal aspect intermediate between sulphur-yellow and olive-green. *Quill feathers* and greater coverts umber-brown, edged with sulphur-yellow. The outer vanes of the *tail feathers* and the tips of their inner vanes brown, the rest of the inner vanes gamboge-yellow, except those of the middle pair of feathers, which are almost entirely brown. *Under surface.*—The forehead, whole under plumage, and inner wing coverts, rich king's-yellow, approaching to saffron. Breast and belly streaked longitudinally with brownish-orange. *Legs* yellowish-brown.

Form, &c., need not be detailed, as it is typical.

The *female* (killed on the 7th of June) has more of the olive tint on the dorsal aspect, very little of the bright-yellow on the forehead, and the colour of the under plumage is pure king's-yellow, without orange streaks. A *young bird*, from Pennsylvania, in Mr. Swainson's museum, agrees in colour with the female, except that it is a little paler beneath.

SYLVICOLA MACULOSA.

London Printed for John Murray, Per Bernard & Co Canonbury Islington

Dimensions

Of the *male*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	4	9	Length of the bill on its ridge	0	4½
,, of the tail	1	9	,, of the tarsus	0	9
,, of the folded wing	2	6	,, of the middle toe	0	5½
,, of the bill from the angle of the mouth	0	6	,, of the middle claw	0	2
			,, of the hind toe	0	3½
			,, of the hind claw	0	2½

[47.] 2. Sylvicola maculosa. (Swainson.) *Yellow-rump Warbler.*

Sub-family, Parianæ. *Genus*, Sylvicola. Swainson.
Yellow-rumped Fly-catcher (*Muscicapa uropygio luteo*). Edwards, pl. 255.
Ficedula Pennsylvanica, nævia. Brisson. *Orn.*, iii., p. 502.
Yellow-rump Warbler. Penn. *Arct. Zool.*, ii., p. 400, No. 288.
Sylvia maculosa. Lath. *Ind.*, ii., p. 536, sp. 108. Bonap. *Syn.*, p. 78, No. 106.*
Sylvia magnolia. Wilson, iii., pl. 23, f. 2.

Plate xl.

Although rare in the United States, this is a common bird on the banks of the Saskatchewan: it is as familiar as the *S. æstiva*, which it resembles closely in manners, but is gifted with more varied and agreeable notes. It was often seen by us in the thickets of young spruce-trees and willows, flitting near the ground from one branch to another. It feeds on winged insects. The specimens seen by Wilson were constantly among the higher branches, and were very active and restless. It is one of the most beautiful of all the American Warblers.

* On consulting the above synonymes, it evidently appears that Brisson, Pennant, and Latham have copied their account of this species from that first given by our countryman Edwards. Besides the internal evidence which these descriptions afford of such being the case, the fact is corroborated by a singular circumstance: all these writers describe the back as of an *olive-colour*. Such was the specimen described by Edwards, and which was doubtless a female or young male. This account of an immature specimen seems to have deceived Wilson. The great similarity between the young bird of his *Sylvia coronata* and the *Yellow-rumped Fly-catcher* of Edwards—both having the back *olive-green*,—led him to think they were the same. The passage in Edwards runs thus: "The tail feathers, *except the two middlemost*, which are black, have the *middle parts* of their inner webs white, their tips and bottoms being black." Now this is a strong and peculiar character in Wilson's bird; for although nearly all the *Sylvicolæ* have the two or three outer feathers on each side marked with white, the *S. magnolia* of Wilson is the only one we are acquainted with where this colour extends through the middle of *all* the lateral feathers.—Sw.

DESCRIPTION

Of a *male*, killed at Cumberland House, lat. 54°, May 26, 1827.

Colour.—Upper aspect of the head and nape pearl-grey; back (the anterior part), pitch-black; centres of the posterior feathers the same, their margins greenish-yellow. Rump crossed by a broad band of gamboge-yellow; tail coverts pitch-black; lesser wing coverts and scapularies black, the former broadly bordered with pearl-grey, the latter with pearl-grey and yellow; quills and primary coverts blackish-brown, their outer webs narrowly edged with grey; the tertiaries and greater secondary coverts broadly edged with white, and the adjoining row of lesser coverts tipped with the same, forming together a large white patch, streaked or spotted with black. *Tail* black; inner webs of all the lateral feathers (midway) white for half an inch; the exterior webs slightly bordered with grey. *Under surface.*—A narrow velvet-black streak runs round the base of the upper mandible, and, passing backwards, includes the lores, eyelids, and cheeks: this is separated from the grey of the crown by a narrow white line above the orbit. Throat and belly bright gamboge-yellow, with black spots on the breast and flanks, and crowded into a band across the base of the neck. Inner wing coverts and under tail coverts white. *Bill* and *legs* dark umber-brown.

Form, &c.—*Wings* shorter, with webs proportionably broader than those of *S. coronata;* the first quill is half a line shorter than the second, third, and fourth. *Tail* rather long, and moderately rounded, the exterior feathers being about a line shorter than the others. In some specimens, the central pair are a little shorter than the adjoining ones.

Our specimens, three in number, agree exactly with each other in size and plumage; but the sex of one only, which was a male, is known. The dress of the *female* has not been ascertained.

Dimensions

Of the *male*.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	5	0	Length of the tarsus	0	8
,, of the tail	2	2	,, of the middle toe	0	5
,, of the folded wing	2	5	,, of its claw	0	2
,, of the bill on its ridge	0	4	,, of the hind toe	0	3
,, of the bill from the angle of the mouth	0	$5\frac{3}{4}$	,, of its claw	0	$2\frac{1}{4}$

SYLVICOLA PITECRIA.

London Printed for John Murray Publisher to the Admiralty January 1st 1810

[48.] 3. Sylvicola petechia. (Swainson.) *Yellow Red-poll Warbler.*

Sub-family, Parianæ. Genus, Sylvicola, Swainson.
Yellow Red-poll (*Avicula lutea, vertice rubro*). Edwards, pl. 256.
Red-head Warbler. Penn. *Arct. Zool.*, ii., p. 401, No. 289.
Sylvia petechia. Lath. *Ind.*, ii., p. 535, sp. 103.
Yellow Red-poll Warbler (*Sylvia petechia*). Wilson, iv., p. 19, pl. 28, f. 4. Male.*
Sylvia petechia. Bonap. *Syn.*, p. 83, No. 123.

Plate xli.

I shot a single specimen of this bird on the swampy banks of the Saskatchewan, at Cumberland House, in a shady thicket of willows, alders, and ash-leaved maples. It seemed to be a shy, solitary, and silent bird; but I saw only one individual; and although I know that it quits that country on the approach of winter, I cannot state the date of its arrival and departure, nor the extent of its range to the northward. If the identity of our bird with Wilson's be allowed, it may be stated, from that author, that it visits Pennsylvania early in April, and departs in September. It is supposed to winter in the southern states, as several were shot in Georgia late in February.

DESCRIPTION

Of a specimen, killed at Cumberland House, lat. 54°, May 26, 1827. (Sex not ascertained.)

Colour of the dorsal aspect between hair-brown and liver-brown, shaded on the rump with greenish-yellow. Between the eyes a large patch of orange-brown. A short mæsial streak of yellow divides the forehead; a broader yellow line extends from the nostrils over the eye to the ear. Quill feathers pale on their margins, as if worn: two exterior tail feathers tipped with white on their inner webs. *Under surface.*—Throat, vent feathers, and under tail coverts gamboge-yellow, the former obscurely spotted with brown. Belly and breast faded greyish-yellow, with umber-brown streaks on the shafts. There is a slight yellowish tinge on the interior wing-coverts, and the insides of the quill feathers are pale clove-brown. *Bill* and *feet* umber-brown.

* The general resemblance of our specimen to the *Sylvia petechia* of Wilson induces us to refer it to that species, although there are sufficient differences to throw a doubt on their identity. Wilson's description, which follows, may be compared with that of our bird. "Length five inches, extent eight; line over the eye and whole lower parts, rich-yellow; breast streaked with dull-red; upper part of the head reddish-chestnut, which it loses in winter; back yellow-olive, streaked with dusky; rump and tail coverts greenish-yellow; wings deep blackish-brown, exteriorly edged with olive; tail slightly forked, and of the same colour as the wings. The *female* wants the red cap, and the yellow of the lower parts is less brilliant: the streaks of red on the head are also fewer and less distinct."—Sw.

Form, &c., typical; but the *bill* rather more elevated and less wide than that of *S. æstiva*. *Tail*, in our specimen, much worn, and appearing slightly notched.

Dimensions.

	Inches.	Lines.		Inches.	Lines.
Length from the tip of the bill to the end of the tail	5	0	Length of the bill, measured along the ridge	0	$5\frac{1}{2}$
,, of the tail	1	10	,, of the tarsus	0	9
,, of the folded wing	2	$4\frac{1}{2}$	,, of the middle toe	0	$5\frac{3}{4}$
,, of the bill, from the angle of the mouth	0	$6\frac{1}{2}$	,, of its claw	0	2
			,, of the hind toe	0	3
			,, of its claw	0	$2\frac{1}{4}$

[49.] 4. Sylvicola coronata. (Swainson.) *Golden-crowned Warbler.*

Sub-family, Parianæ. Genus, Sylvicola, Swainson.
Golden-crowned Fly-catcher (*Muscicapa aureo vertice*). Edwards, pl. 298.
Golden-crowned Warbler. Penn. *Arct. Zool.*, ii., p. 403, No. 294. Adult male; summer.
Dusky Warbler. Idem, ii., p. 410, No. 309. Autumnal.
Grasset Warbler. Idem, ii., p. 411, No. 314. Autumnal.
Belted Warbler. Idem, ii., p. 408, No. 306. Adult male; summer.
Sylvia coronata. Lath. *Ind.*, ii., p. 538, sp. 115. Adult male; summer.
Sylvia umbria. Idem, ii., p. 518, sp. 34. Adult; autumn.
Sylvia pinguis. Idem, ii., p. 543, sp. 132. Adult; autumnal.
Sylvia cincta. Idem, ii., p. 539, sp. 116. Adult male; summer.
Yellow-rump Warbler (*Sylvia coronata*). Wilson, ii., p. 138, pl. 17, f. 4. Summer male. Idem, v., p. 121, pl. 45, f. 3. Winter plumage.
Sylvia coronata. Bonap. *Syn.*, p. 78, No. 104.

This bird arrives on the banks of the Saskatchewan about the middle of May, and continues there the whole summer, frequenting willow thickets and the borders of streams and lakes, where the *Myrica gale* grows in abundance. It seemed to be a shy, distrustful bird, at that season at least, affecting the darkest places, and concealing itself with great dexterity when pursued. It departs in September. I did not discover its nest, nor could I ascertain the extent of its range to the northward. Wilson informs us that it reaches Pennsylvania from the north early in October, in its olive dress, and frequents the cedar-trees (*Juniperus Virginiana*), devouring the berries with great avidity. After remaining in that district for three or four months, it retires to spend the winter in Virginia and the southern States, where it feeds much on the berries of the *Myrica cerifera*. He found it in the southern parts of Georgia as late as the middle of

March, at which time it had partly assumed its slate-coloured dress, and was informed that its change of colour was completed before it began its journey to the north, in the beginning of April. About the twentieth of that month it reappears in Pennsylvania, and remains for eight or ten days pursuing flies, when it passes on to its breeding quarters in the north. Within the United States this bird associates in considerable numbers; but in the fur-countries it is seen only in pairs.

DESCRIPTION

Of a specimen, killed at Cumberland House, 28th May, 1827*.

Colour.—Dorsal aspect of the head, neck, back, tail coverts, and lesser wing coverts bluish-grey, with a pitch-black oblong stripe in the middle of each feather, small towards the head and large on the back. An oval patch of bright gamboge on the crown; a broad band of the same colour on the rump, and another on each side of the breast. Sides of the head and ears pitch-black. A narrow white line from the nostrils over the eye, with a smaller one beneath. Quills, greater coverts, and tail blackish-brown. Greater and lesser coverts each tipped with a narrow greyish-white band; quills narrowly edged with the same; tail feathers of a deeper tint than the quills, broadly margined with bluish-grey; the three exterior ones largely blotched with white near the tips of their inner webs. *Under surface.*—Chin and upper part of the throat white. The lower part of the neck, breast, and fore part of the belly and flanks pitch-black, with a few white edgings: middle of the breast and all the posterior parts pure white. *Bill* and *legs* blackish-brown.

Form.—*Bill* much shorter than that of *S. æstiva*, the bristles more like those of *Setophaga cucullata*, Sw., and reaching to one half the length of the bill; but it is less wide posteriorly, and has a less acute ridge than that of the *Sylvia maculosa*. *Wings* an inch shorter than the tail. The second and third quill feathers are the longest, the first is shorter than the fourth, and this again is a line shorter than the third. The secondaries are truncated, and have an obtuse notch at the end of their shafts. The *tail* is strongly emarginated in the middle, and also slightly rounded, the third feather being the longest, the outer one half a line shorter, and the middle pair about a line shorter: the ends of all these feathers are pointed. In a very fine adult specimen, in Mr. Swainson's museum, the two outer pairs of tail feathers are the longest.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . . .	6	0	Length of bill above . .	0	$4\frac{3}{4}$	Length of middle claw .	0	2
,, of tail . .	2	5	,, of tarsus . .	0	$8\frac{1}{4}$	,, of hind toe .	0	3
,, of folded wing .	2	$10\frac{1}{2}$	,, of middle toe . .	0	$5\frac{1}{2}$	,, of hind claw . .	0	$2\frac{1}{4}$
,, of bill from rictus	0	7						

—R.

* Although the sex of this specimen was not ascertained, it agrees with Wilson's account of the *male* bird. The plumage of the female, he says, is less vivid.—R.

In this elegant and interesting bird we have a still further deviation from the typical species; and Nature has obviously begun the passage by which she unites, by collateral affinity, the circle of the *Sylvicolæ* with that of the *Setophagæ*. The shorter bill of *S. coronata*, the brevity of the first quill feather, the length of the bristles round the mouth, are all indications of an approach to the structure of the fly-catching *Setophagæ*. Accordingly we find that Wilson makes the following remark: "Although the bill of this species obliges me to arrange this bird with the Warblers (*Sylvicola*, Sw.), yet in his food *and all his motions he is decidedly a Fly-catcher* (*Setophaga*, Sw.)." As the *Sylvicolæ* represent in their own circle the Gold-crested Warblers of Europe,—the two genera in point of fact being parallel,—we accordingly see a striking analogy between them: in both groups, *and in no others of the family*, do we find birds with a bright golden crown.—Sw.

[50.] 5. SYLVICOLA STRIATA. (Swainson.) *Black-poll Warbler.*

SUB-FAMILY, Parianæ. *Genus*, Sylvicola, SWAINSON.
Black-poll Warbler. PENN. *Arct. Zool.*, ii., p. 401, No. 290.
Sylvia striata. LATH. *Ind.*, iv., p. 527, sp. 67.
Black-poll Warbler (*Sylvia striata*). WILSON, iv., p. 40, pl. 30, f. 3. Male; very exact.
IDEM, vi., p. 101, f. 4. Female.
Sylvia striata. BONAP. *Syn.*, p. 81, No. 115.

Our specimen of this bird was killed by an Indian in the neighbourhood of Cumberland House, in the latter end of May. He found it in a shady wood, flying about among the upper branches of the trees: its stomach was filled with musquitoes. It arrives in Pennsylvania about the 20th of April, and most probably reaches the fur-countries about the middle of May, along with its allied species; but I am unable to throw any light on the extent of its range to the north. Most of the small birds quit those quarters in the end of August or beginning of September. It was seen by Mr. Say at Engineer cantonment on the 26th of April. In the vicinity of New York, during the spring, it is one of the most common birds.—R.

The greater depression of the bill renders this the first aberrant species in

the advance that Nature makes towards the genus *Setophaga;* since, in the shortness of the bristles round the mouth, the length of the bill and of the first quill feather, we have all the typical characters of *Sylvicola.* We find, accordingly, that Wilson, who looks more to its manners than to its structure, notices this affinity in much more qualified terms than when he speaks of *S. coronata.* "This bird," he remarks, "may be considered as occupying an intermediate station between the Fly-catchers (*Setophaga*, Sw.) and the Warblers (*Sylvicola*, Sw.), having the manners of the former, and the bill, partially, of the latter." —Sw.

DESCRIPTION

Of a *male*, killed at Cumberland House, 25th May, 1827.

Colour.—Upper aspect of the head velvet-black: a broad stripe of white from the lower mandible covers the ears. Dorsal aspect of the neck, body, and tail coverts, bluish-grey, with broad central stripes of pitch-black. The greater and lesser wing coverts and tertiaries blackish-brown, the two former tipped with white, the latter edged with the same. Primaries dark clove-brown, narrowly margined with pale, dull, greenish-yellow. Tail feathers blackish-brown, the two exterior pairs with a large white spot near the tip of their inner webs: those adjoining with a very narrow white border at the same place. The *under plumage* is white; but the sides of the chin, throat, breast, and body are thickly spotted with deep-black. *Bill* brownish-black above, pale yellowish-brown below. *Legs* yellowish.

Form.—*Bill* somewhat shorter, yet wider at the base and with a more acute ridge than that of the *Sylvicola coronata*, and straighter than that of the *Sylvicola maculosa:* the basal bristles do not exceed the length of the nostrils. *Wings*, when folded, more than an inch short of the end of the tail. First *quill feather* the longest, second and third nearly a line shorter in succession. All the tail feathers are of equal length; but from their inner webs being rounded off at the tip, the tail appears emarginated.

DESCRIPTION

Of a *female*, from Mr. Swainson's museum.

Colour.—Dorsal aspect of the head, neck, scapulars, and interscapulars, oil-green, with narrow blackish-brown central stripes; the posterior part of the back and shorter tail coverts inclining to grey, the stripes less frequent. Quills and tail coloured nearly as in the male, the bands on the wings, &c., being pale primrose-yellow, instead of white. The *under plumage* pale buff-yellow, whiter down the middle; sides of the neck, breast, and flanks spotted with black. A yellow streak passes from the nostrils over the eyes. Length 5 inches; of the tail, $2\frac{1}{8}$ inches; of the folded wing, $2\frac{3}{4}$ inches; and of the tarsus, $\frac{3}{4}$ inch.

A *young male*, also in Mr. Swainson's collection, differs from the female only in the upper

plumage having broader central black stripes, and in the under plumage having merely some faint touches of yellow, being for the most part greyish-white, with more numerous and distinct black spots on the sides of the neck and breast. Its dimensions correspond with those of the female.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . . .	6	0	Length of bill above .	0	5	Length of claw . .	0	2
,, of tail . .	2	3	,, of tarsus . .	0	9	,, of hind toe . .	0	3
,, of folded wing .	3	0	,, of middle toe .	0	$5\frac{3}{4}$	,, of claw . .	0	$2\frac{1}{2}$
,, of bill from rictus	0	$6\frac{1}{2}$						

[51.] 6. Sylvicola (Vermivora) rubricapilla. (Swainson.) *Nashville Worm-eater.*

Genus, Sylvicola. *Sub-genus*, Vermivora, Swainson.
Nashville Warbler (*Sylvia ruficapilla*). Wilson, iii., p. 120, pl. 27, f. 3.
Sylvia rubricapilla. Idem. Bonap. *Syn.*, p. 87, No. 140. *Obs.*, p. 107.

Plate xlii. Upper figure.

A single individual of this species was killed in the woods at Cumberland House, on the 15th of May, as it was hopping about among the branches of a tree, and emitting a creaking noise, something like the whetting of a saw, similar to that which has obtained for the Tomtit, in Scotland, the local name of "Stone-cherker." Wilson saw only three individuals in Tennessee; but the Prince of Musignano states that it occasionally visits Pennsylvania in the spring*.

DESCRIPTION

Of a *male*, killed at Cumberland House on the 15th May, 1827.

Colour.—Dorsal aspect greenish-yellow, deepest on the tail coverts: bases of the crown feathers tinged with orpiment-orange, which is not seen when they lie smooth: barbs of the dorsal plumage much detached, permitting the blackish-grey bases to shine through. *Quill* and *tail feathers* hair-brown, edged with greenish-yellow: exterior margin of the first quill and tips of some of the secondaries very slightly edged with white; interior webs

* This specimen seems more intensely coloured than that described by Wilson. The yellow on the under parts, although pure, is not vivid, and the sides of the breast, body, and flanks are greenish. The rufous colour of the head is only seen when the feathers are raised, as their tips are glossed with cinereous-grey. The tail, although divaricating, can scarcely be termed forked, as the length of the middle feathers is equal to that of the others. The first quill feather is very slightly shorter than the second, and the bill is perfectly straight and acutely conic.—Sw.

VERMIVORA rubricapilla Temminck

London, Pubd. by John Murray, Albemarle Street to the Admiralty, June 1st 1831

of two or three of the outer tail feathers whitish near their ends. *Under plumage* sulphur-yellow, changing to primrose on the abdomen, and pure gamboge-yellow on the under tail coverts: inner wing coverts yellow. *Bill* and *legs* pale umber-brown.

Form.—*Bill* perfectly awl-shaped, both mandibles tapering equally; commissure very slightly arched. *Wings:* the second, third, and fourth quill feathers scarcely differing in length. *Tail* even. Length of the hind toe equal to that of the inner one; its claw equal in length, but stronger and more curved than that of the middle one.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . . .	5	0	Length of bill on its ridge	0	$4\frac{3}{4}$	Length of middle nail .	0	2
,, of tail . .	2	3	,, of tarsus . .	0	$7\frac{1}{2}$	,, of hind toe . .	0	$2\frac{1}{2}$
,, of folded wing .	2	5	,, of middle toe .	0	$4\frac{3}{4}$	,, of nail . . .	0	2
,, of bill from rictus	0	$5\frac{3}{4}$						

[52.] 7. Sylvicola (Vermivora) peregrina. (Swainson.) *Tennessee Worm-eater.*

Genus, Sylvicola. *Sub-genus,* Vermivora, Swainson.
Tennessee Warbler (*Sylvia peregrina*). Wilson, iii., p. 83, pl. 25, f. 2.
Sylvia peregrina. Bonap. *Syn.*, p. 87, No. 140.

Plate xlii. Under figure.

One specimen only was procured at Cumberland House, on the banks of the Saskatchewan, in the latter end of May. It was seen in a dense thicket of small trees, flying about among the lower branches; and as it was pursued some time without being driven away from the place, it is probable that it had a nest and mate in the neighbourhood. Nothing was ascertained respecting its habits.—R.

In some points of colour our specimen differs from that described by Wilson. Both the series of wing coverts, and not the lesser only, are coloured like the back. The lesser quills are also edged with rich yellow-olive; but the greater are bordered by a clear pearly-white,—not, as in Wilson's bird, "edged broadly with yellow-olive." Not only the upper surface of the head, but that of the neck also, is cinereous, without any mixture of olive. These differences, however, may possibly originate in age. The *Sylvia bicolor* of Vieillot (pl. 90 *bis*) is a totally distinct species from this, and is the only one of this group yet discovered in Brazil. M. Vieillot, perhaps by mistake, says it inhabits North America: inde-

pendent of colour, it has a much more lengthened bill. In all the essential characters our bird is a true *Vermivora;* but the bill, when examined under a lens, exhibits a slight notch, somewhat removed from the tip of the upper mandible; a character never seen in the typical *Vermivoræ*, but developed in *Zosterops*, the tenuirostral type of the genus. The *Zosterops Javanica* (Sylvia Javanica, Horsf.) so closely resembles Wilson's bird in plumage, that they might, on a cursory examination, be thought the sexes of one species. Their colours differ only on the breast and belly, *S. peregrina* having these parts nearly white, while in *Zosterops Javanica* they are olive-yellow: their bills, of course, are differently formed.—Sw.

DESCRIPTION

Of a specimen, killed at Cumberland House, lat. 54°, May 28, 1827.

Colour.—Upper surface of the head and neck blackish-grey, crown darker. The whole of the back, wing and tail coverts, margins of the secondaries, tertiaries, posterior primaries and tail feathers greenish-yellow, deepest on the rump and tail coverts. Quills and primary coverts clove-brown; the first five or six primaries edged exteriorly with pearl-grey. Middle tail feathers glossed with greenish-yellow, the others edged with the same; the three outer pairs have a white spot on the ends of their inner webs, the spot being largest on the exterior feather and very small on the third one. *Under surface.*—A streak, from the nostrils over the eye, the ears, and chin pale yellowish-grey; throat, vent, under tail coverts, axillary feathers, and inner wing coverts, all white, the latter tinged near the borders of the wing with yellow; breast, belly, and flanks tinged with oil-green. *Bill* dusky; rictus and base of the lower mandible paler. *Legs* pale.

Form, &c.—*Bill* very like that of *Vermivora rubricapilla*, with the exception of the obsolete notches alluded to above, and in being rather stouter. The *wings* differ in the three first feathers being equal and longest, while the fourth is nearly two lines shorter: in *Verm. rubricapilla* the first is shorter than the fourth. The *tail* is slightly emarginated; the feathers, except the central pair, are strongly truncated on their inner webs, as in *S. rubricapilla.*

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total	4	7	Length of bill from rictus	0	6	Length of middle nail	0	2
,, of tail	1	9	,, of tarsus	0	8	,, of hind toe	0	$2\frac{3}{4}$
,, of folded wing	2	6	,, of middle toe	0	5	,, of hind claw	0	2
,, of bill on the ridge	0	$4\frac{3}{4}$						

[53.] 1. SETOPHAGA RUTICILLA. (Swainson.) *Yellow-tailed Gnat-catcher.*

SUB-FAMILY, Parianæ, SWAINS. *Genus*, Setophaga, SWAINS. *Zool. Journ.*, No. 9, Dec., 1827, p. 360.
Small American Redstart (*Ruticilla minor Americana*). EDWARDS, pl. 80, ann. 1747. Male.
Yellow-tailed Fly-catcher (*Muscicapa cauda lutea*). IDEM, pl. 257, ann. 1757. Female.
Muscicapa ruticilla. LINN.
Black-headed Warbler. LATH. *Syn.*, iv., p. 427, sp. 18. Female.
Yellow-tail Warbler. PENN. *Arct. Zool.*, ii., p. 406, No. 301. Female.
Black-headed Warbler. IDEM, ii., p. 398, No. 282. Male.
American Redstart (*Muscicapa ruticilla*). WILSON, i., p. 103, pl. 6, f. 6. Male. IDEM, v., p. 119, pl. 45, f. 2. Young.

This beautiful little bird, the typical species of Mr. Swainson's genus *Setophaga*, is said to winter in the West Indies, and is found generally throughout North America in summer up to the fifty-eighth parallel of latitude. Late in April it appears in Pennsylvania, and on the Missouri, according to Mr. Say, by the 28th of that month. May is far advanced before it arrives on the banks of the Saskatchewan; and it quits both the fur-countries and the United States in the beginning of September. It frequents moist, shady places in the Hudson's Bay lands, flitting about among the moss-grown and twisted stems of the tall willows which skirt every marsh in those quarters. Like the Pine-creeper, as described by Wilson, it shuns the observation of the passers-by, by running round to the opposite side of a branch; but the red of the inside of the wings readily betrays it as it flies through these gloomy shades in pursuit of musquitoes and other winged insects. It has a single acute, but very agreeable note.—R.

The foregoing particulars on the economy of Wilson's American Redstart, joined to the interesting memoirs given in the *American Ornithology*, illustrates most fully and most completely the station which this elegant bird holds in the scale of created beings. In the first place, it is an ambulatory Fly-catcher, that is, pursuing insects from *one station to another;* and is therefore essentially distinct from the *true Fly-catchers*, which sit still and watch for their prey. "*It is almost perpetually in motion*, and will *pursue* a party of retreating flies from the tops of the tallest trees to the ground."—*Am. Orn.*, p. 103. Secondly, although a true *Setophaga*, it should nevertheless bear a very close resemblance to the *Sylvicolæ*, as united to them by close affinity; and we consequently find Wilson observing, that "Several of our most respectable ornithologists have classed this bird with the Warblers." Thirdly, it sometimes "traverses the branches of trees *lengthways*," and at others hides itself, as Dr. Richardson observes, *like a creeper:* both of which habits should belong to a group which passes into *Accentor*, by means of *Seïurus aurocapillus*, since the latter bird has the *first* of

these habits, while *Accentor* has the *second*. Fourthly, it is frequently "flirting its expanded tail from side to side;" thus preserving its analogy to the Fan-tailed Warblers of Australia, which *Setophaga*, in fact, represents. Fifthly, marshy and watery places are its favourite haunts: this we should naturally expect in any group which typifies the *Natatores*, or aquatic order, and the *Fissirostres* in its own circle. Lastly, this curious bird, in the disposition of its colours so much resembles the Redstart of Europe (*Phœnicura*, Sw.), that it is called in America by that name! Now it may be demonstrated, by an analysis of the sub-family *Philomelinæ*, Sw., that *Setophaga* actually represents *Phœnicura*. We know not in what manner to expound these relations, so wonderfully minute, and yet so beautifully exact, but by supposing that, in this group at least, the true plan of Creative Wisdom has been discovered. To frame a system such as this, which explains affinities the most varied, and analogies almost interminable, surpasses the utmost pitch of human ingenuity.—Sw.

DESCRIPTION

Of a *male*, killed at Cumberland House, May 20.

Colour.—Head, neck, back, throat, and breast shining black, very slightly glossed with blue; wings and tail reddish-black. A band across the quills; the inner wing coverts, sides of the breast, and middles of the tail feathers, rich and vivid orpiment-orange, except the central pair of the latter, which are wholly black. The black on the breast descends and forms a curve on each side of the orange patch, leaving the middle nearly white. Belly, flanks, and under tail coverts white. *Bill* pitch-black. *Legs* light-brown.

Form, typical. *Bill* entirely depressed, with an acute ridge; the *vibrissæ* more than half its length. *First and fourth quills* equal, and very little shorter than the second and third. *Tail* lengthened, rounded; the feathers rather broad, their tips suddenly terminating in a small acute point.

A *young male*, (which, according to Wilson's observations, must be nearly a year old,) killed at Cumberland House on the 5th of June, 1830, has the dorsal aspect liver-brown; the head greyish; and those parts of the breast, wings, and tail which are orange in the adult, tinged with pale lemon-yellow. Under parts greyish-white; the *bill* and *legs* dark umber-brown. Dimensions as in the adult. Wilson informs us that the *female* has the same colours with the young male, but wants the yellow band on the wing.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total	5	2	Length of bill above	0	4	Length of middle claw	0	2
,, of tail	2	4½	,, of tarsus	0	8	,, of hind toe	0	3
,, of folded wing	2	7½	,, of middle toe	0	4¾	,, of its claw	0	2¼
,, of bill from rictus	0	6¼						

SETOPHAGA BONAPARTII.

London. Printed for John Murray, Bookseller to the Admiralty, January 1st 1836.

[54.] 2. Setophaga Bonapartii. (Swainson.) *Bonaparte's Gnat-catcher.*

Sub-family, Parianæ. Swains. *Genus*, Setophaga. Swains.
Muscicapa Canadensis. Wilson, iii., p. 100, pl. 26, f. 2 ? ?
Sylvia Pardalina. Bonap. *Syn.*, p. 79 ? ?
Muscicapa Bonapartii. Audubon*. *Birds of America.*

Plate xlvii. Male.

A single specimen of this bird was killed, in June, at Cumberland House. It was observed, in a dense alder thicket, perched on a branch near the ground, and uttering three or four loud, but very sweet notes. On our approach it retreated from place to place of the thicket with much quickness, and we had some difficulty in getting near enough to secure it as a specimen. From the time of year in which it was seen, we have no doubt of its breeding in that quarter.—R.

This interesting species demonstrates, in the most beautiful and unquestionable manner, the lateral junction of the two groups *Setophaga* and *Sylvicola*. Its connexion to the latter is so close, that the Prince of Musignano regards it as a Warbler (*Sylvicola*, Sw.); while Wilson, adopting the opinion of all preceding writers, considers it a *Muscicapa* (*Setophaga*, Sw.), since, as he observes, "it has much of the Fly-catcher in its manners." Of the *Setophaga mitrata*, which the Prince places immediately after this in his suite of species, Wilson thus writes:—"Why this bird should have been arranged with the Warblers (*Sylvicola*) is to me unaccountable, as few of the *Muscicapæ* (*Setophagæ*) are more strongly marked. It is perpetually in *pursuit* of *winged* insects." Here, then, the series is completed, even by the species noticed in the foregoing pages; and this collateral affinity is established both by the progressive and almost imperceptible change of one form to the other, and by the nice and discriminating observations of one of the most veracious writers on Ornithology that has ever existed.—Sw.

DESCRIPTION

Of a *male*, killed at Cumberland House, lat. 54°, June 6, 1827.

Colour.—Head, neck, body, and lesser wing coverts, blackish-grey, glossed on the interscapulary space with mountain-green: black central spots on the head feathers, crowded and

* But for the opinion of our friend Mr. Audubon, who assures us this is his new species of *Muscicapa*, dedicated by him to the Prince of Musignano, we should have had no hesitation in considering it as the *Muscicapa Canadensis* of Wilson; and even the high estimation in which we hold the practical knowledge of our friend, fails to remove our suspicion on this head. We can perceive no character, either in the figure or the description of Wilson, which does not accord with our bird. The specific name must, therefore, rest on Mr. Audubon's authority; while, as regards the generic, we consider the whole structure of the bird as obviously intermediate between the *Sylvicolæ* and the typical *Setophagæ*, although much more closely allied to the latter than to the former.—Sw.

mixed with yellow on the frontlet. A black line, from the base of the lower mandible, passes over the under-eyelid to the shoulders. Quills and tail clove-brown, the inner margins of the former pale. The chin and whole *under plumage* pure and bright gamboge-yellow, a broad belt of triangular black spots crossing the upper part of the breast; under tail coverts whitish; the inner wing coverts pale ash-grey. *Bill* dark umber-brown above, pale yellowish-brown at the base below. *Orbits* yellow. *Legs* yellowish-brown.

Form.—*Bill* depressed, with an acute ridge; its tip notched and inflexed, *vibrissæ* half the length of the bill. Second and third quills the longest; the first two lines shorter. *Tail* long, rounded, and yet notched at the end, the feathers being rather acute. *Tarsus* long, slender, and naked; lateral toes equal, scarcely longer than the hind toe, and considerably shorter than the middle one.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . .	4	10	Length of bill from rictus	0	6¼	Length of middle nail	0	1¾
„ of tail . .	2	2	„ of tarsus . .	0	9	„ of hind toe . .	0	3
„ of folded wing	2	6	„ of middle toe	0	5	„ of hind nail .	0	2
„ of bill above .	0	4¾						

[55.] 1. Parus atricapillus. (Linn.) *Black-cap Titmouse.*

Sub-family, Parianæ, Swains. *Genus*, Parus, Linn. *Typical Pari*, Swains.
Parus atricapillus. Linn., i., p. 341, sp. 6. Brisson. *Orn.*, iii., p. 553, pl. 29, f. i.
Mésange à tête noire de Canada. Buffon.
Black-capt Titmouse (*Parus atricapillus*). Wilson, i., p. 134, pl. 8, f. 4.
Parus atricapillus. Bonap. *Syn.*, p. 100, No. 157.
Peecheh-keeskā̆shees. Cree Indians. Mésange. Canadian Voyageurs.

This bird inhabits the whole width of the American continent from latitude 65° to the southern districts of the United States throughout the year. Its loose plumage, like that of the Canadian Jay, is well qualified for its protection in the severe arctic winters. It is so extremely similar to the European *Parus palustris* that some ornithologists have classed it as the same; the two species, however, appear to us sufficiently distinct. It is one of the most common birds in the fur-countries, a small family inhabiting almost every thicket.

DESCRIPTION

Of the *male*, killed at Carlton House in April, 1827.

Colour.—Upper aspect of the head, the nape, chin, and throat velvet-black. A white line from the nostrils through the eye, spreads out on the side of the neck. Back lead-coloured,

glossed with yellowish-grey; quill and tail feathers blackish-grey, edged with greyish-white. Under plumage brownish-white, deepening in some specimens to yellowish-grey. *Bill* pitch-black. *Legs* bluish.

Form.—*Bill, nostrils*, &c., typical. Fifth quill feather longest, but scarcely exceeding the fourth and sixth, and only two lines longer than the third and seventh; eighth two lines shorter than the seventh; ninth about as much shorter than the eighth, and equal to or a little exceeding the second; first less than half the length of the second. *Tail* long, rounded. *Tarsi* considerably longer than the middle toe. Two lateral toes adherent to the middle one by their first phalanges; third one most robust and furnished with the longest claw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . . .	5	6	Length of bill on its ridge .	0	5	Length of middle claw .	0	1½
,, of tail . .	2	10	,, of tarsus . .	0	7¾	,, of hind toe . .	0	3
,, of folded wing .	2	8	,, of middle toe . .	0	4¼	,, of hind claw .	0	2

[56.] 1. Seïurus aurocapillus. (Swainson.) *Golden-crowned Accentor.*

Genus, Seïurus. Swainson.
The Golden-crowned Thrush. Edwards, pl. 252. Penn. *Arct. Zool.*, ii., p. 339.
Golden-crowned Thrush (*Turdus aurocapilla*). Wilson, ii., p. 88, pl. 14, f. 2.
Turdus coronatus. Vieil., *Ois. de l'Am.*, ii., pl. 64, p. 8.
Sylvia aurocapilla. Bonap. *Syn.*, p. 77, No. 102.

This very pretty bird breeds on the banks of the Saskatchewan, and perhaps in still higher latitudes, and also as far south as Pennsylvania. It reaches the latter State in April, and departs late in September, after having reared two broods. Mr. Say mentions that it arrives on the upper branches of the Missouri on the 26th of April, and it makes its appearance in the fur-countries ten or twelve days afterwards. It winters within the tropics, the specimen from which Edwards's figure was drawn having been taken off St. Domingo on the 1st of November, 1751. Bartram and Wilson inform us that it builds its nest in the woods among the fallen leaves, choosing a declivity with a southern aspect. The nest is sunk below the surface, built of grass, arched over and lined with hair, a small hole only being left for an entrance. The eggs are four or five, of a white colour, sprinkled all over, but chiefly towards the large end, with spots of yellowish-brown, intermixed with a few larger ones of subdued purplish-grey.

They are $1\frac{8}{10}$ inch in length. Wilson is mistaken in saying that this species has no song; for the male serenades his mate in the breeding season with a loud, clear, and remarkably pleasing ditty, sitting on the lower branches of an alder or willow tree in the vicinity of the nest.—R.

The mode of constructing its nest, analogous to that of the Wrens and other Scansorial types, is at once explained by the analogy of this group to the genus *Troglodytes* and the tribe of *Scansores*, both of which, in conjunction with *Accentor*, it represents in the circle of *Parianæ*. We see this bird again represented in the most remarkable manner by the *Oxyrhynchus cristatus*, Sw., (since altered, for what reason we know not, to *Flammiceps*,) which occupies a perfectly analogous station in the family of *Picidæ*. If the colours of the crown of *S. aurocapillus* were more vivid, one description of plumage might serve for both birds. How superficially do we study Nature!—Sw.

DESCRIPTION

Of a *male*, killed at Cumberland House, June 1, 1827.

Colour.—Dorsal aspect between dark hair-brown and oil-green*: crown brownish-orange, bounded on each side by a line of black spots. *Under plumage* white, thickly marked on the breast and flanks with pitch-black, triangular, thrush-like spots; axillary feathers and inner wing coverts pale primrose-yellow. *Bill* umber-brown above: the whole lower mandible pale. *Legs* pale.

Form.—Typical. The *bill* is stouter than that of *S. aquaticus*, and does not taper so suddenly: the lower mandible in particular is more robust. *Vibrissæ* on the rictus, and chin short. *Wings* an inch shorter than the tail; second quill the longest, but scarcely exceeding the first and third. *Tail* slightly emarginated, its feathers acutely pointed. *Tarsus* much longer than the middle toe; covered with a single or entire scale as in *S. aquaticus*: lateral *toes* equal, and longer than the hind toe: *claws* small.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total	5	9	Length of bill above	0	6	Length of middle nail	0	$1\frac{3}{4}$
,, of tail	2	3	,, of tarsus	0	$9\frac{1}{2}$	,, of hind toe	0	3
,, of folded wing	2	11	,, of middle toe	0	6	,, of hind claw	0	$2\frac{1}{2}$
,, of bill from rictus	0	7						

—R.

* Rich yellow-olive.—Wilson.

SELÍRUS AQUATICUS.

London Printed for John Murray Bookseller to the Admiralty January 1st 1829

[57.] 2. SEÏURUS AQUATICUS. (Swainson.) *Aquatic Accentor.*

GENUS, Seïurus. SWAINSON.
La fauvette tachetée de la Louisiane. BUFFON. *Pl. Enl.* 752, f. 1 ?
New York Warbler. PENN. *Arct. Zool.*, ii., p. 308, No. ? ?
Sylvia Novæboracensis. LATH. *Ind.*, ii. p. 518, sp. 33 ? ?
Turdus aquaticus. WILSON, iii., p. 66, pl. 23, f. 5.
Seïurus tenuirostris. SWAINS. *Syn.*, No. 36.
Sylvia Novæboracensis. BONAP. *Syn.*, p. 77, No. 103 ?

PLATE XLIII.

On first receiving this species from Mexico, we thought it distinct from the *Turdus aquaticus* of the *American Ornithology*, as Wilson particularly says "that the bill is formed almost exactly like that of the Golden-crowned Thrush," without adding that it is much more gracile. A comparison, however, of the Mexican with the Arctic specimens proves they are of one species,—the *aquaticus* of Wilson probably. Whether the *Turdus motacilla* of Vieillot be also the same, is another question, and admits of considerable doubt. Again, Wilson alludes to what he calls a *variety* of his *Turdus aquaticus*, which inhabits the mountain-streams of Tennessee, where it is "pretty numerous, and *particularly distinguished* by the legs being of a *bright-yellow* colour." He adds, "in other respects it differs not from *aquaticus*, whose legs are *flesh-coloured*." The colour of these members cannot be traced in the dried skin, and therefore this distinction is of little use in our present difficulty. These particulars, given by Wilson, and the difference in the bill before alluded to, give rise to strong suspicion that there are two species confounded under this head, while the other may possibly be our bird, or the *T. motacilla* of Vieillot. The latter, in fact, seems to differ in several respects *from both*. Whether these variations really exist in nature or arise from inaccurate description we know not; the point merits attention from the American ornithologists. Innumerable instances might be mentioned, in addition to those exemplified in this work, of species clothed nearly in the same coloured plumage, which are absolutely and essentially distinct. We may further remark, that Wilson says the lower parts are white, tinged with yellow-*ochre;* whereas, in our specimen, the tint is of a pale and clear straw-colour*. On mature consideration,

* As it is totally impossible to say what is the *Sylvia Novæboracensis* of the old writers, a bird, according to Pennant, found in the *hedges* of New York, we have retained the expressive name of Wilson, whose description of *a quaticus* is certainly more applicable to our bird than to any other we have yet seen. Should this, however, eventually prove distinct, it can then preserve the name of *tenuirostris*, by which we formerly distinguished it.—Sw.

we are more disposed to view this bird and *Seïurus aurocapillus* as entering in the circle of *Accentor*, than to place them within the confines of the *Motacillinæ*. If this eventually proves to be their real station in nature, *Seïurus* becomes, of course, a sub-genus. Do they, in fact, possess the same analogical relations? We suspect not.—Sw.

This bird was seen only at Carlton House, where it frequented the moist and thickly-wooded points of the river. It arrived in May, and disappeared after a few days, probably going farther north to breed.

DESCRIPTION

Of a specimen, killed at Carlton House, lat. 53°, May, 1827.

Colour.—Whole upper plumage a remarkably uniform and very deep hair-brown. Eye-stripe, chin, and whole under surface very pale primrose-yellow; throat, breast, and flanks marked at the tips with wedge-shaped spots of the colour of the upper plumage. Inner wing coverts yellowish-grey, spotted with brown near the edges of the wing. *Bill* dark umber-brown above, paler beneath. *Legs* brownish.

Form, &c.—*Bill* rather wider than high at the base; upper mandible somewhat suddenly narrowed in the middle; tip slender and minutely notched. Three first quills equal, the rest diminish in succession, the greatest interval occurring between the fourth and fifth. *Tail* square, or very slightly rounded; its feathers obliquely truncated on their inner webs, which are broader than those of *S. aurocapillus*. Tarsus slender and considerably longer than the middle toe: first phalanx of the outer toe adherent to the middle one: lateral toes nearly equal. Nails very small: they are more curved, and the hind one is longer than in *S. aurocapillus;* but the structure of the feet is otherwise alike in both.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . . .	5	9	Length of bill from rictus	0	8	Length of nail . . .	0	2
,, of tail . .	2	4	,, of tarsus . .	0	10½	,, of hind toe . .	0	3
,, of folded wing .	3	0	,, of middle toe .	0	6½	,, of hind nail . .	0	2½
,, of bill above . .	0	5						

ANTHUS AQUATICUS.

[58.] 1. Anthus aquaticus. (Bechstein.) *Reddish-brown Titlark.*

Sub-family, Motacillinæ. Swainson. *Genus*, Anthus. Bechstein.
The Little Lark from Pennsylvania (*Alauda Pennsylvanica*). Edwards, pl. 297.*
Red Lark. Penn. *Arct. Zool.*, ii., p. 393, No. 279 ?
Brown Lark (*Alauda rufa*). Wilson, v., p. 89, pl. 42, f. 4.
Anthus spinoletta. Bonap. *Syn.*, p. 90, No. 144.

Plate xliv.

This bird was observed in small flocks on the plains of the Saskatchewan, in the spring of 1827, feeding on the larvæ of small insects, particularly of a species of ant, whose habitations are constructed with small twigs and loose straws. It most probably goes further north to breed.

DESCRIPTION

Of a specimen, killed at Carlton House, 14th May, 1827.

Colour.—Dorsal aspect hair-brown; most of the feathers darker in the centre. Wings and tail liver-brown; the quills narrowly, and the tertiaries and coverts broadly, edged with pale brownish-white. The outer tail feather white†, except at the base of its inner web; the adjoining one also white exteriorly and at its tip. *Under surface.*—Chin and line over the eye brownish-white. Neck and body wood-brown, inclining a little to ochraceous, with some small liver-brown spots on the breast and flanks. Inner wing coverts cinereous, with small brown spots. *Bill* and *legs* black.

Form, &c.—Typical. *Wings.* First quill feather the longest; second, third, and fourth becoming in succession just perceptibly shorter; the fifth half an inch shorter than the fourth; the second, third, and fourth sinuated exteriorly, and the tips of the secondaries truncated and emarginated. Tertiaries long; one of them only a line or two shorter than the fourth quill feather. *Tail* lengthened and emarginated: the middle pair of feathers nearly a quarter of an inch shorter than the others. *Tarsus* much longer than the middle toe. *Toes* slender; hind toe a little shorter than the inner, which nearly equals the outer one: the middle toe does not exceed these above a line and a half. *Nails* slender, subulate, acute, and but slightly curved; the hinder much the longest.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total	7	0	Length of bill to rictus	0	7¾	Length of middle toe	0	6
„ of tail	2	0	„ of bill above	0	6	„ of middle nail	0	3
„ of wing	3	4	„ of tarsus	0	10	„ of hind nail	0	4½

—R.

* The Little Pennsylvanian Lark of Edwards is probably a variety of ours, in which "the outer feathers on each side of the tail are white, and the *two* next to them have white tips. The under side, from bill to tail, is of a light reddish-brown, with dusky spots." In our bird, these spots are confined to the breast and flanks. His figure is poor. That of Wilson is well drawn, but so inaccurately coloured, that, but for the description, we should have supposed it represented another species.—Sw.

† The extent of the oblique brown mark on the inner web of the outer tail feather varies in different specimens.

AMPELIDÆ.—*FRUIT-EATERS.*

In the group of *Ampelidæ* there are fewer species than in any one family of the *Dentirostres*, and consequently the investigation of their affinities is attended with unusual difficulty*. It is, therefore, with considerable doubts on the true nature of the aberrant divisions, that we offer the following table as exhibiting some approximation to the truth.

AMPELIDÆ.

		Sub-families.
1. *Typical group.*	Mouth excessively wide; feet short, strong; toes nearly free.	*Ampelinæ.*
2. *Sub-typical group.*	Mouth smaller; feet longer, weaker; syndactyle.	*Piprinæ.*
3. *Aberrant group.*	Wings short, rounded; rictus bristled; feet strong; toes nearly free.	*Leiotrichanæ.*
	* * * * *	———
	Wings very long, pointed; toes free; rictus smooth.	*Bombycillinæ.*

The typical distinctions of the whole group appear to consist in the shortness of the bill and the excessive width of the mouth, by which latter structure these birds can swallow large berries, and even fruits of a moderate size, *in an entire state*. They never alight upon the ground, but are continually moving about the branches of trees: the feet are consequently very short, the soles broad, and the toes more or less united at the base. The rictal bristles, which protect the mouth of all insectivorous groups, in this are totally wanting; except in such forms as lead off to the Warblers on one side, and to the Fly-catchers on the other. With very few exceptions, the whole family is confined to the New World.

The two typical groups, as usual, contain by far the largest proportion of the genera; and hence it is that, from having analysed their contents, we can venture

* It has been ludicrously enough imagined, that the fewer are the forms which enter into a group, the more easily can they be arranged according to *a* natural system; just, perhaps, "as a chain is more connected in proportion to the number of links that are wanting!"—See *Mr. W. S. Mac Leay's Examination of Mr. Bicheno's Paper on Systems and Methods*, in *Zool. Journ.*, No. xvi., p. 413, &c.—Sw.

to pronounce one of them, at least, to be perfect. At present we must confine ourselves to a few remarks on the aberrant forms.

The genus *Procnias* of Count Hoffmanseck is evidently placed beyond the circle of the true *Ampelinæ*, typically represented by the genera *Cashmorhynchus* of M. Temminck, and the restricted genus *Ampelis* of Linnæus. Unlike all the other forms, its wings are very long and formed for rapid flight. The same character belongs to the Brazilian genus *Phibalura*, and is equally conspicuous in the European Chatterers (*Bombycilla*). These are the only three genera we have yet ventured to place within this subdivision. The fourth is still more obscure, and would seem to be represented by the *Lanius arcuatus* of the Paris Museum; a bird with the plumage of *Phibalura* and the bill of *Vireo*. To this latter group the Australian genus *Pachycephala*, Sw., appears, to us, to be unquestionably related; while the *Parus indicus*, now characterized as the genus *Leiothrix*, Sw., makes the nearest approach, of any bird yet discovered, to *Pachycephala* on one side, and to the *Parianæ* on the other. The latter affinity, indeed, is so strong as recently to have led M. Temminck into the belief that it actually belonged to the old genus: a glance, however, at its structure would have shewn how totally it differed. Although we feel some confidence in the situation here assigned to *Leiothrix*, we are totally unprepared at present to state the extent of this division; neither is it at all clear whether *Vireo* and *Pachycephala* form a part of this, or constitute the remnants of another sub-family. The mode in which the three aberrant groups may possibly be united cannot, of course, be even conjectured.—Sw.

[59.] 1. VIREO OLIVACEUS. (Bonaparte.) *Red-eyed Greenlet.*

GENUS, Vireo. VIEILLOT.
Red-eyed Fly-catcher (*Muscicapa olivacea*). WILSON, ii., p. 55, pl. 12, f. 3.
Muscicapa altiloqua. VIEIL. *Ois. de l'Am. Lep.*, i., pl. 38, p. 67.
Vireo olivaceus. BONAP. *Syn.*, p. 71, No. 91.

CH. SP. VIREO OLIVACEUS, *supra flavescenti-viridis; subtus albescens, vertice et lineis inter oculos et rostrum plumbeis, lineâ superciliosâ albescenti, alis elongatis, remige primâ quartam æquanti.*

SP. CH. RED-EYED FLY-CATCHER, yellowish-green, beneath whitish; crown and a line between the bill and eye blackish-grey; eye-stripe white; wings long; the first and fourth quill feathers equal.

We have frequently remarked the disposition of Nature to disguise species, essentially distinct, in the same coloured plumage; and this is sometimes done so

completely, that the differences, although conspicuous in their modes of life, are only evinced, in external structure, by modifications so nice and delicate as frequently to elude detection. We have seen this fact exemplified among the olive-coloured Fly-catchers, and we shall now explain similar differences in the present group. It may be remarked that Wilson, in his account of *Sylvia olivacea*, alludes to another and a rather smaller species, which is frequently found in its company. "Its eyes are hazel, *its back more cinereous** than that of the other, and it has a *single* light streak over the eye. The notes of this bird are somewhat plaintive, but warbled out with great sweetness, and form a striking contrast to those of the *Red-eyed Fly-catcher* (*M. olivacea*)." Pennant's account of the *Red-eyed Fly-catcher*† does not agree with any known species. It has a general likeness to all, without shewing a particular application to any one. It includes, in short, the whole of these long-billed species under the same name.—Sw.

DESCRIPTION

Of a *female*, killed on the 2nd of June, 1827, at Cumberland House, lat. 54°.

Colour.—Upper part of the head, and a streak from the angle of the mouth to the ears, blackish-grey: above this streak a larger greyish-white one passes over the eye, its upper border formed by a narrow, but conspicuous line of black. The whole *dorsal* plumage, with the neck, the tertiaries, and the wing coverts, oil-green. Quills and tail feathers dark clove-brown, margined with yellowish-green. The *under plumage* delicately white, very slightly tinged with grey; the flanks, inner wing coverts, and under tail coverts pale primrose-yellow. *Bill* blackish-brown above, pale beneath. *Legs* blue-grey.

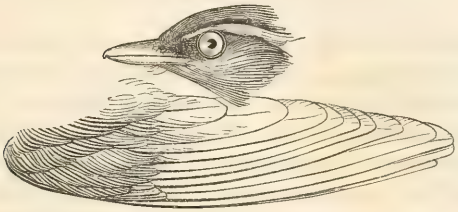
Form, &c.—*Bill* straight, lengthened, the tip abruptly bent and conspicuously notched. Lower mandible with the *gonys* ascending; the sides of both compressed, and the whole appearance resembling that of a *Myothera*, Ill. *Nostrils* roundish, basal: a few short, curved, and very weak bristles at the *rictus*. *Wings* lengthened, pointed, half an inch shorter than the tail. Second and third quill feathers equal and longest; first and fourth also nearly equal, and about a line and a half shorter than these. Secondaries truncated at the end, but not emarginate. *Tail* even, but appears slightly emarginated from the inner webs of the feathers being obliquely truncated: the tips pointed. *Tarsus*, with the anterior scales, transversely divided: lateral scales entire. The three anterior *toes* all more or less connected at their base; the inner one shortest. *Nails* much curved and compressed; the hinder one strongest.

* If this distinction is intended for the *Sylvia melodia* of Wilson, which we have not seen, it may be correct; but it is altogether inapplicable to our *Vireo Bartramii*, which is rather *more* green on the back than *Vireo olivaceus*. —Sw.

† *Arctic Zoology*, iii., p. 79.

Dimensions
Of the *female*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . . .	5	9	Length of bill above .	0	5½	Length of middle nail	0	2
,, of tail . .	2	3	,, of tarsus . .	0	9	,, of hind toe . .	0	4
,, of wing . .	3	2	,, of middle toe .	0	5¾	,, of hind nail . .	0	2¼
,, of bill to rictus .	0	8						



[60.] **2. Vireo Bartramii.** (Swainson.) *Bartram's Greenlet.*

Genus, Vireo. Vieillot.

Ch. Sp. Vireo Bartramii, *colore* Vireonis olivacei *sed clariori, staturâ minori, alis brevioribus magisque rotundatis; remige primâ sextam æquanti: remigibus tertiis et quartis longissimis.*

Sp. Ch. Bartram's Fly-catcher, plumage of *V. olivaceus*, but brighter; stature smaller; wings shorter, more rounded; the first and sixth quills nearly equal, the third and fourth longest.

To this species, which does not appear to have been distinctly defined, or recorded as a native of the United States, we have affixed the name of one whose love of science, no less than his devotion to the study of Nature, will long render his memory dear to the admirers of Wilson. There are four described species which come so near to this, that we shall briefly state in what they appear to differ.

1. The *Muscicapa melodia* of Wilson, or *Vireo gilva* of Bonaparte, *if correctly described*, must be distinct: it has the head "*only inclining a little* to ash," and has no black line bordering the crown. Prince Charles Bonaparte expressly says, the bill is "short," in opposition to that of *Olivaceus*, which he terms "long." The colours are "much less vivid and striking than those of *Olivaceus*:" in ours they are the same, or rather more bright. Again, the same observing ornithologist remarks, that the *longer and more robust bill* of *Olivaceus* distinguishes it from *Gilvus:* but the bill of our species is of the same size and length as that of the former.

2. The *Muscicapa altiloqua* of Vieillot, which may either be, as Bonaparte observes, the *V. olivacea*, or the species here denominated *longirostris*.
3. The *Sylvia gilva* of Vieillot, which is probably the *melodia* of Wilson above noticed: the description is too loose and unsatisfactory to be applied to our bird.*
4. The *Vireo virescens* of the same author, which may be this species, or *another, much smaller*, of which a wing only was brought home by the Expeditions.

It is the misfortune of those who aim at accuracy, that they are either obliged to give new names to species which they cannot find perfectly described, but which, in fact, *may not* be new,—or they must assimilate their species to some other, which eventually turns out to be totally distinct. Of two evils, we rather choose to risk the former, since a striking instance of the latter is given in this very group: the West Indian bird being perfectly different from that of North America, with which, as it now appears, all writers have confounded it.

A specimen of this species was procured, by Mr. David Douglas, on the banks of the Colombia. It appears to have been a young bird, and is somewhat injured by insects; but we have attentively compared it with two other specimens †, one from Brazil, the other from South Carolina, and all three agree in that particular structure of the wing which is nearly the sole external distinction it possesses. The essential differences, in short, between the two species in their outward form is confined to the structure of their wings and to their respective sizes. *Olivaceus* is larger, and has the first quill feather invariably much longer than the fifth, a character which is conspicuous in *seventeen specimens* now before us. *Bartramii* is much smaller, the colours rather brighter, the wings considerably shorter and more rounded, and the first quill always shorter than the fifth. The former seems confined to North America, the latter extends to Brazil. The comparative size of the bills in both is the same, but the length is variable.

The following measurements will shew the differences of size between the species more clearly.

	Vireo olivaceus. Inches.	V. Bartramii, yng. Inches.	V. Bartramii, adult. Inches.
Total length	$5\frac{5}{10}$	$4\frac{6}{10}$	$5\frac{3}{10}$
,, of the bill from the front .	$\frac{5}{10}$	$\frac{4}{10}$	$\frac{5}{10}$
,, of the wings	$3\frac{8}{10}$	$2\frac{6}{10}$	$2\frac{8}{10}$
,, of the tarsus	$\frac{7}{10}$	$\frac{6}{10}$	hardly $\frac{7}{10}$

—Sw.

* "Cette espèce a le bec et les pieds bruns; la tête, le dessus du cou, *et du corps* gris: cette teinte est *légèrement* nuancée de verdâtre sur le dos. Longueur totale quatre pouces, neuf lignes."—*Ois. de l'Am. Lep.*, i., p. 65.

† In Mr. Swainson's museum.

DESCRIPTION

Of an *adult*, shot by Mr. Swainson in Brazil, lat. 12° S.

Size somewhat larger than the *Wood-wren*. *Plumage* precisely the same as that of *Vireo olivaceus;* but the olive-green on the upper parts brighter, and the yellow tint on the vent, under tail coverts, and under wing coverts, stronger. The stripe of white over the eye equally broad, clear, and margined above by a similar black line.—Sw.

VIREO LONGIROSTRIS. (Swainson.) *Long-billed Greenlet.*

GENUS, Vireo. VIEILLOT.

Olive-coloured Fly-catcher (*Muscicapa sub-fusco-viridis sive olivacei coloris*). EDWARDS, pl. 253, p. 93.

CH. SP. VIREO LONGIROSTRIS, *colore* Vireonis olivacei, *lineâ gulam cingente nigrâ, rostro elongato, alis brevibus mediam caudæ haud attingentibus, remige quartâ primam superanti.*

SP. CH. Plumage of *V. olivaceus;* chin margined by a black line; bill lengthened; wings short, not reaching to half the length of the tail; the first quill feather shorter than the fourth.

It is probable that the true *Vireo olivaceus* does not occur in the West Indies, and that the bird known there by the name of *Whip-Tom-Kelly* (supposed by Wilson, from the similarity of its notes, to be the same with *V. olivaceus,*) is in reality different. We have never seen a specimen of the true *olivaceus* from those islands; but, *under that name*, we have received, both from Jamaica and St. Vincent's, a third, which we shall here describe, to complete the illustration of the two preceding. We strongly suspect that this is the identical species first made known by our accurate countryman Edwards, whose figure has been quoted by all writers for the *olivaceus* of North America. The specimen which Edwards examined had been preserved in spirits, and the colours of the plumage must consequently have been obscured: hence his description, in this respect, is somewhat defective; but it is worthy of remark, that the blackish line on the *side of the chin*, although not mentioned in the description, is perfectly indicated in the plate; while the length of the bill and the shortness of the wings are so completely characteristic of our bird, that we have no doubt of its being the same. Edwards expressly mentions, that he received his specimen from Dr. Browne, who brought it from Jamaica, where it is known, says the Doctor, by the name of *Whip-Tom-Kelly;* "it has not many notes, but they are loud and sweet."—Sw.

DESCRIPTION.

Size and general plumage similar to *Vireo virescens* and *olivaceus*, except in the colours being somewhat duller than those of the last: it is essentially distinguished by a narrow line of dusky-black, which margins each side of the *chin:* the bill is proportionably lengthened, and the wings so short as hardly to exceed the length of the upper tail covers. *Total length*, $5\frac{1}{2}$ inch.; bill from the front, $\frac{6}{10}$ inch; wings, $2\frac{7}{10}$ inch.; and tarsi, $\frac{7}{10}$ inch.

—Sw.

[61.] 1. BOMBYCILLA GARRULA. (Bonap.) *European Chatterer.*

SUB-FAMILY, Bombycillinæ. SWAINS. *Genus*, Bombycilla. BRISSON.

Bombycilla Bohemica. BRISS. *Orn.*, ii., p. 333.

Ampelis garrulus. GMEL. *Syst.*, i., p. 838, sp. 1.

Waxen Chatterer. LATH. *Syn.*, iii., p. 91, sp. 1.

Grand Jaseur (*Bombycivora garrula*). TEMM., i., p. 124.

Bombycilla garrula (*Bohemian Wax-wing.*) BONAP. *Orn.*, pl. 16, f. 2.

This elegant bird has only lately been detected in America, having been discovered, in the spring of 1826, near the sources of the Athabasca, or Elk river,

by Mr. Drummond, and by myself the same season at Great Bear Lake, in latitude 65°. Specimens, procured at the former place, and transmitted to England by the servants of the Hudson's Bay Company, were communicated, by Mr. Leadbeater, to the Prince of Musignano, who has introduced the species into his great work on the birds of the United States. In its autumn migration southwards this bird must cross the territory of the United States, if it does not actually winter within it; but I have not heard of its having been hitherto seen in America to the southward of the fifty-fifth parallel of latitude. The mountainous nature of the country skirting the Northern Pacific Ocean being congenial to the habits of this species, it is probably more generally diffused in New Caledonia and the Russian American territories, than to the eastward of the Rocky Mountain chain. It appears in flocks at Great Bear Lake * about the 24th of May, when the spring thaw has exposed the berries of the alpine arbutus, marsh vaccinium, &c., that have been frozen and covered during winter. It stays only for a few days, and none of the Indians of that quarter with whom I conversed had seen its nests; but I have reason to believe that it retires in the breeding season to the rugged and secluded mountain-limestone districts, in the sixty-seventh and sixty-eighth parallels, when it feeds on the fruit of the ommon juniper, which abounds in these places.

DESCRIPTION

Of a *male*, killed at Great Bear Lake on the 24th May, 1826.

Colour.—The *plumage* very delicate, the barbs long, slender, and detached, but lying smoothly so as to form a dense covering. The colour is pure bluish-grey on the tail coverts and posterior part of the back, but elsewhere, both on the *ventral* and *dorsal* aspects and on the crest, it is yellowish-grey, deepening on the head and neck into a pleasing brownish-grey. Front and under tail coverts bright reddish-orange :† chin and a band on each side of the head deep velvet-black. Primary coverts and quill feathers brownish-black, with a conspicuous band on the tips of the former: the first primary and the tertiaries unspotted; the remaining quills with each a linear spot on the tip of its outer web, which is of a pale king's-yellow on four or five of the primaries, and white on the rest and on the secondaries. Six or seven of the secondaries, and occasionally the longest tertiary, have their shafts terminating in a curious, small, oblong, flat, cartilaginous process, of a bright carmine-red

* I observed a large flock, consisting of at least three or four hundred individuals, on the banks of the Saskatchewan, at Carlton House, early in May, 1827. They alighted in a grove of poplars, settling all on one or two trees, and making a loud twittering noise. They stayed only about an hour in the morning, and were too shy to allow me to approach within gunshot.

† The exact colour meant is buff, mixed with tile-red and chestnut-brown, and answering nearly to the *helvolus* of authors.

colour, and having the appearance and lustre of sealing-wax. *Tail* coloured like the quills, tipped with a band of king's-yellow half an inch wide. *Bill* and *legs* black. *Irides* dark-red.

Form, &c.—*Bill* typical. The first and second primaries are subequal and longest. The *tail* is nearly even, and the coverts reach nearly to the end. *Tarsi* remarkably short, feathered below the knee. Lateral toes unequal.

A *female*, killed at the same time, differs in having the marks on the tips of the primaries untinged with yellow; the cartilaginous prolongations fewer; a narrower yellow tip to the tail, and a smaller and less intense black mark on the chin.

Dimensions

	Of the male. Inch.	Line.	The female. Inch.	Line.		Of the male. Inch.	Line.	The female. Inch.	Line.
Length total	9	0	8	6	Length of middle toe	0	9	0	8
,, of tail	2	6	2	5	,, of middle nail	0	3½	0	3¼
,, of wing	4	7¼	4	3	,, of inner toe	0	4½	0	4½
,, of bill on its ridge	0	6	0	5¾	,, of inner nail	0	2	0	2
,, of bill to rictus	0	10½	0	10	,, of hind toe	0	4	0	4
,, of tarsus	0	10	0	9	,, of hind nail	3	3½	0	3¼

[62.] 2. Bombycilla Americana. *The Cedar-bird.*

Genus, Bombycilla. Brisson.
Bombycilla Carolinensis. Briss., ii., p. 337, 1. Idem, 8vo., i., p. 251.
Chatterer of Carolina. Edwards, pl. 242.
Cedar-bird (*Ampelis Americana*). Wilson, i., p. 107, pl. 7, f. 1.
Bombycilla Carolinensis. Bonap. *Syn.*, p. 59, sp. 68.
Recollect. Canadian Voyagers.

This species was considered by Linnæus, Latham, and others, to be a mere variety of the preceding one, from which, however, it is perfectly distinct. It is a more southern bird, not having been observed hitherto, I believe, to the northward of the fifty-fourth parallel of latitude. It inhabits the United States the whole year, being more common in the northern and middle States in summer, and frequenting the southern States in the winter season. Wilson informs us that it forms compact flocks, containing from twenty to fifty individuals, which usually alight on the same tree. It feeds on berries of all kinds, and is very fond of the fruit of the sour-gum and red-cedar. The young are fed at first on insects and their larvæ, but, as they advance in growth, on berries of various kinds. The female, if disturbed, darts from the nest in silence to a considerable distance; no notes of wailing or lamentation are heard from either parent; and the season

of love, which makes almost every other small bird musical, has no such effect on them; for they continue at that interesting period silent as before*. Mr. Drummond saw several small flocks on the south branch of the Saskatchewan, on the 27th of June, and obtained some specimens. It likewise frequents the northern shores of Lakes Huron and Superior in the summer. Cook, and other voyagers, report it to exist on the north-west coast of America; but they might easily mistake the preceding species for this one.

DESCRIPTION

Of a *male*, killed on the south branch of the Saskatchewan, lat. 52½°, June 27, 1827.

Smaller than *B. garrula*, and without any white on the wings. Quill feathers blackish-grey: the head, neck, and breast clear yellowish-brown; the belly gamboge-yellow; and the under tail coverts nearly white,—in the European species they are orange-brown. Seven or eight of the secondaries are tipped with carmine-red cartilaginous processes. The black marks at the base of the bill and on the side of the head resemble those of the other species, and are faintly bordered with white; but the chin has very little black. Quill feathers formed as in *B. garrula;* but the *bill* is rather shorter and broader.

A *female*, procured by Mr. Drummond, wanted entirely the waxen appendages to the secondaries. Wilson observes that the young birds do not receive them until the second autumn. He further remarks, that the chief difference of the female plumage is its duller tints, the narrowness of the yellow bar on the tail, and the inferior appearance on the crest.

A *young bird*, in Mr. Swainson's collection, has the upper plumage of the head and body of a hair-brown colour, paler on the neck and rump. The wings and tail as in the mature bird, except that the former want the waxen appendages. The black frontal mark is narrower, and there is no black on the chin. The under plumage is mostly hair-brown, edged with yellowish-grey, the belly and vent being straw-yellow.

DIMENSIONS.

	Of the male. Inch.	Line.	The female. Inch.	Line.		Of the male. Inch.	Line.	The female. Inch.	Line.
Length total	7	6	7	3	Length of middle toe	0	7½	0	7½
,, of tail	2	7	2	5	,, of middle nail	0	2¼	0	2¼
,, of wing	3	8	3	8	,, of inner toe	0	4	0	4
,, of bill on the ridge	0	5	0	5	,, of inner nail	0	1½	0	1½
,, of bill from rictus	0	8	0	8	,, of hind toe	0	3¼	0	3¼
,, of tarsus	0	8	0	7½	,, of hind nail	0	3	0	3

* WILSON, l. c.

CONIROSTRES.

The lesser Tyrant Fly-catchers of the New World appear stationed, in the great scheme of Nature, either at the utmost limits of the *Laniadæ*, or in that part of the circle of *Todidæ* which forms a connecting passage between the two. If these views be correct, it follows that no typical forms of the *Muscicapidæ* (or rather *Todidæ**) have yet been discovered in America. We pass, therefore, to the Conirostres, the typical tribe of the perching order. This, in comparison with the Dentirostres, is a most imperfect group; not only are the variations fewer, and the sub-families more unequal in their contents, but several forms are wanting. Hence it is that wide intervals between groups, yet evincing an unquestionable *tendency* to unite, frequently occur. And while these gaps in the chain of continuity offer the best facilities to the makers of artificial methods, they oppose obstacles of the greatest difficulty to the investigators of the natural system. In these cases the study of analogies becomes of the first importance; since, however we may insist on degrees of affinity, they can never be admitted as correct, until established by such analogical tests as we have applied to the groups investigated in the preceding pages. On the other hand, as the *hiati* in the Conirostral circle are nearly confined to two only of the aberrant divisions, we have little doubt on the correctness of the following table, as explaining the circular succession of the families.

1. *Typical group.*	Bill strong, the upper mandible curved, obsoletely notched; nostrils concealed; wings lengthened, rounded; tarsi elevated.	Corvidæ.
2. *Sub-typical group.*	Bill more lengthened, sub-conic, upper mandible nearly straight, not thicker than the under, generally entire; nostrils naked; wings lengthened, pointed; tarsi shorter.	Sturnidæ.
3. *Aberrant group.*	Bill short, very strong, and perfectly conic.	Fringillidæ.
	Bill short, strong, the under mandible weak, the margins serrated; feet various.	Musophagidæ.
	Bill enormous, greatly compressed; feet syndactyle.	Buceridæ.

* We are more than usually embarrassed in proposing a name for this group; having ascertained, by analysis, that the *Todus viridis* is a sub-generic Fissirostral type among the broad-billed Fly-catchers, strictly so termed. Systematists, however, have lately detached this bird as a distinct genus, while the typical form of the whole family, to which the name of *Todus* has been correctly applied by the old writers, is now known as the genus *Eurylaimus*. This confusion, unintentional on all sides, is the inevitable consequence of giving names to forms, before their affinities have been thoroughly investigated. In this dilemma, we know not how to proceed: if we restore the appellation of *Todus* to *Eurylaimus*, we must give a new name to the *Todus viridis*; while, if this be not done, the denomination of the sub-families is incorrect: upon the whole, we have preferred the latter, as less liable to disturb the received nomen-

The three subordinate divisions of the aberrant group contain, as usual, genera of much apparent dissimilarity; they may, however, be defined as birds having the bill much thicker and more powerful than those of the typical groups, while their general structure is weaker and more imperfect. This inferiority is evinced, among the *Fringillidæ*, by their diminutive size; in the *Musophagidæ*, by the feet being adapted only for frequenting trees, and in the restriction of their food to vegetables; while in the bulky Hornbills (*Buceridæ*) the tarsi are unusually short and the toes nearly syndactyle. None of these imperfections are observed among the *Corvidæ* and the *Sturnidæ*. We therefore agree with Mr. Vigors in considering that these families represent the perfection of the ornithologic structure*.

The precise manner in which the aberrant circle is closed, by the union of the *Fringillidæ* and the *Buceridæ*, cannot at present be explained; their absolute affinity, however, has been already acknowledged, and their union insisted upon†. As to the *Musophagidæ*, comprising the genera *Musophaga*, *Corythaix*, *Colius*, and *Phytotoma*, any ornithologist, who actually examines these birds, must be convinced that they offer so many steps of gradation between the *Buceridæ* and the *Fringillidæ*, yet too distinct to be comprehended under either of those families.

We must pass over the analogical relations of the Conirostral group, and merely confine ourselves to a few remarks upon the

FRINGILLIDÆ,

as being that family which offers the greater number of species brought home by the Expeditions. The primary divisions of this group, which is certainly the most extensive in the whole circle of Ornithology, may be thus stated:—

1. *Typical group.*

Tribes of Insessores.		Sub-families.
Conirostres.	Bill thick, very conic, and entire, the margin of the upper mandible sinuated.	*Coccothraustinæ.*

2. *Sub-typical group.*

Dentirostres.	Bill with the culmen bent, the upper mandible notched.	*Tanagrinæ.*

clature of well-known species. In one of the modern systems, the *T. viridis* is placed between the Goatsuckers and the Kingfishers,—and this situation is called *natural!*—Sw.

* A well-known zoologist, whose opinions in general carry much weight, considers that this perfection lies among the *Scansores*, and that the *Psittacidæ* are the typical group of the ornithological circle. We can only say that this idea, which seems merely founded upon theory, receives no confirmation from analysis. Were it correct, it would not only annul everything here written, but completely demolish that very system upon which the author has bestowed such unqualified praise as to pronounce, that "*Birds now form the only class in Zoology which has been arranged according to the variation in structure.*"—*Linn. Trans.*, xvi., p. 6.

† *Linn. Trans.*, xiv., p. 450.

3. *Aberrant group.*

Fissirostres. Tenuirostres. Scansores.	Bill conic, nearly entire, the under mandible generally smaller than the upper one.	*Fringillinæ.* *Alaudinæ.* *Pyrrhulinæ.*

The latter division, from the great diversity of its contents, cannot be defined by characters applicable to all; yet that it constitutes a circular group we can have little doubt; since the close affinity between *Pipilo* and our *Emberiza cristata** indicates that by such forms the *Fringillinæ* and the *Pyrrhulinæ* are brought together. The Sparrows, the Buntlings, and all the plain-coloured Finches of northern latitudes are thus detached from all others, and associated among the true *Fringillinæ*,—proving that even colour is one of the leading distinctions in the system of Nature.

The circular affinities of the *Fringillidæ* will, however, be better understood by the following sketch. On quitting the *Sylviadæ*, by means of the Lark-Warblers (*Anthus*), we at once enter among the true Larks. From this group Nature departs by two routes; one lies through the Buntling-Larks (*Plectrophanes*), the Buntlings (*Emberiza*), the terrestrial Finches (*Fringilla*), the Sparrows (*Pyrgita*), and the Ground-Buntlings (*Pipilo*); by this latter group she enters among the *Tanagers*, and so reaches the typical form of *Coccothraustes* by the intermediate genera of *Tiaris*, Sw., and *Ploceus*, Cuv. The second, or right-hand route, passes through the genera *Myrafra*, Horsf., *Megalotis*, Sw., *Crithagra*, Sw., and *Pyrrhula*. Between the Bullfinches, generally so termed, and *Coccothraustes*, are the Linnets (*Linaria*); and we again reach the typical structure by means of such forms as *Guiraca*, Sw., and two others, not yet defined. We may premise, that this sketch, meagre as our space compels us to make it, is the result of severe analysis.

The typical sub-families, we may venture to pronounce, are perfect; that is, every genus, and nearly every sub-genus, is known or has been defined. But the three aberrant divisions, namely, the *Fringillinæ*, the *Alaudinæ*, and the *Pyrrhulinæ*, require much more study than they have yet received; we therefore refrain from hazarding any opinion upon the value of their subordinate groups, further than to annul several of the genera and sub-genera proposed by others, as well

* *Zool. Illustrations*, iii., pl. 148, *note*. This remarkable bird, which we now find is unquestionably a native of Brazil, was first described by us under the above name. M. Temminck, as usual, gave it another, and M. Vieillot a third. The figures given by these writers, however beautiful as pictures, are most defective: the bill is represented as perfectly conic, whereas the upper mandible is considerably arched, and its whole form is more like that of a Bullfinch, a *Pipilo*, or a *Guiraca*.—*See our remarks in Appendix to Griffith's Cuvier, Aves*, part ix., p. 687.—Sw.

as by ourselves. We do this with some confidence; since it has, we trust, been demonstrated, that such divisions are no longer arbitrary. Unless they find their representatives in other groups, no genus or sub-genus can now, in short, be natural. By this test, the group here denominated *Zonotrichia* must eventually be tried; since, to use an expressive phrase, its precise station in Nature has not been *worked out*. Still more obscurity hangs over the Linnet-like birds, comprising, among others, the American *Fringilla purpurea* of Wilson and the *Pyrrhula frontalis* of Prince C. Bonaparte: these we refer, conditionally, to the *Pyrrhulinæ*. Yet, on the other hand, we feel by no means sure that they are not aberrant forms in the genus *Linaria*, among the *Coccothraustinæ*.

The geographic distribution of the *Fringillinæ*, or Sparrow-like Finches, is not so general as might be inferred from the number of the species. They abound in cold and temperate climates; but are so thinly scattered in tropical regions, that we know but of two species from South America, and not one from the Indian Islands or Australia. The genus *Emberiza*, however, occurs both in Northern and Southern Africa nearly under its typical form.—Sw.

[63.] 1. ALAUDA CALANDRA. (Linn.) *The Calendre Lark.*

SUB-FAMILY, Alaudinæ, SWAINS. *Genus*, Alauda, LINN.
The Calandra. EDWARDS, pl. 268.
Calandra Lark. PENN. *Arct. Zool.*, ii., p. 393, No. 280.

This Lark was first described as American by Edwards, on the authority of a dealer in birds; but no subsequent author mentions having seen specimens from that continent. There is an individual, however, from the fur-countries, in the British Museum, presented by the Hudson's Bay Company, which differs from an European example solely in its bill and tarsi being rather shorter.

DESCRIPTION
Of a specimen from Hudson's Bay.

COLOUR, &c.—*Upper plumage* liver-brown, with pale margins; throat, belly, inner borders of the tertiaries, exterior tail feathers, and the ends of the adjoining pair, white; the other tail feathers, except the middle pair, slightly tipped with the same; flanks and breast pale-brown, the latter spotted with umber; a dark-brown collar on the anterior base of the neck, and two umber-brown marks on the side of the neck, separated by white. *Bill* greyish, tipped with brown: it is strong, somewhat compressed, and very slightly curved. The hind claw is long and straight.

DIMENSIONS.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . . .	7	6	Length of bill from rictus	0	11	Length of middle claw .	0	4½
,, of tail . .	3	0	,, of tarsus . .	1	2	,, of hind toe . .	0	4¼
,, of wing . .	5	2	,, of middle toe .	0	8¼	,, of its claw . .	0	9
,, of bill above .	0	9						

[64.] **2. ALAUDA CORNUTA.** (Wilson.) *Horned or Shore-Lark.*

SUB-FAMILY, Alaudinæ, SWAINS. *Genus*, Alauda, LINN.
Alauda alpestris. FORSTER, *Phil. Trans.*, lxii., p. 398, No. 20.
Shore Lark. PENN. *Arct. Zool.*, ii., p. 392, No. 278.
Alauda alpestris. LATH. *Ind.*, ii., p. 498, sp. 21.
Shore Lark. WILSON, i., p. 85, pl. 5, f. 4.
Alauda cornuta. IDEM, p. 87.
Alauda alpestris (*Shore Lark*). RICHARDS. *App. Parry's Second Voyage*, p. 343, No. 4.
BONAP. *Syn.*, p. 102, No. 158.
Alauda cornuta. SWAINS. *Syn.*, p. 434, No. 45.
Ootay-tapaysew. CREE INDIANS.*

This very handsome Lark arrives in the fur-countries along with the Lapland Buntling, with which it associates, and, being a shyer bird, is the sentinel, and alarms the flock on the approach of danger. It retires to the marshy and woody eastern districts to breed, extending its range to the shores of the Arctic Sea. Mr. Hutchins states, that "its nest is placed on the ground, and that it lays four or five white eggs, spotted with black. It chirps as it flutters in the air, but has no note whilst on the ground or in flying from place to place." On the advance of winter, it retreats to the southward, and is common in the United States throughout that season, frequenting sandy plains and open downs.

DESCRIPTION

Of a *male*, killed at Carlton House, 14th May, 1827.

COLOUR.—Upper surface of the head and neck, lesser wing and tail coverts, and central pair of tail feathers†, purplish-brown or vinacious; the rest of the tail pitch-black, the outer feather bordered and narrowly tipped with white: quills and greater coverts liver-brown, edged with white. Frontlet, chin, and a broad eye-stripe, which dilates on the ears and side of the neck, yellowish-white. Forehead, nasal feathers, under eyelid, cheeks, throat, and upper part of the breast, velvet-black; the black of the forehead prolonged, over the eyes, into horns capable of erection, like the egrets of an owl. Some vinacious blotches under the wing; the rest of the under plumage greyish-white: inner wing coverts pure white. *Bill* bluish-black, pale at the base beneath. *Legs* blackish-brown.

* The Cree name of *Chee-chup-peesew*, ascribed to this bird by Forster, is, according to Hutchins, the proper appellation of the *Plectrophanes Lapponica*.

† Called, by Forster, two long coverts.

Form typical. *Tarsus* longer than the middle toe and its claw. The toes are all free. The hind claw is nearly straight, tapering, and acute, and is more than half the length of the tarsus.

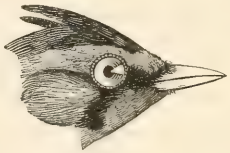
Another *male* specimen, from Hudson's Bay, in Mr. Swainson's collection, differs in the white marks about the head being replaced by primrose-yellow, and in that on the frontle being much broader. This is, probably, the full *autumnal* plumage.

A *female*, killed on Lake Superior, wants the black horned mark, and also the vinacious tint of the head, neck, and shoulders of the male, these parts being coloured like the back. The eye-stripe and under surface of the head are lemon-yellow; and there is a narrow black band, fringed with yellow, on the upper part of the breast. The rest of the plumage nearly as in the male: her dimensions a little smaller.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . .	7	6	Length of bill above .	0	6	Length of middle toe	0	6
,, of tail . .	2	10	,, of bill from rictus	0	8	,, of its nail . .	0	4
,, of folded wing	4	5	,, of tarsus .	0	10½	,, of hind toe . .	0	4
						,, of its nail . .	0	6



[65.] 1. Emberiza (Plectrophanes) nivalis. (Meyer.) *The Snow-Buntling.*

Sub-family, Alaudinæ, Swains.? *Genus*, Emberiza, Linn. *Sub-genus*, Plectrophanes, Meyer.
Emberiza nivalis. Linn. Forster, *Phil. Trans.*, lxii., p. 403, No. 25.
Mountain Bunting. Penn. *Brit. Zool.*, i., p. 279, No. 123. Autumn plumage.
Tawny Bunting. Idem, i., p. 278, No. 121. Autumn plumage.
Snow Bunting. Idem, i., p. 279, No. 122. Winter plumage. Idem, *Arct. Zool.*, ii., p. 355, No. 222.
Snow Bunting (*Emberiza nivalis*). Wilson, iii., p 36, pl. 21, f. 2. Winter.
Emberiza nivalis. Richards. *App. Parry's Sec. Voy.*, p. 343, No. 5. Bonap. *Syn.*, p. 103, No. 159.
Sheegun-peetheesees. Cree Indians. Koppenno-accă-oo. Esquimaux.

This neat and elegant native of the colder regions of both hemispheres breeds in the northernmost of the American islands, and on all the shores of the continent, from Chesterfield Inlet to Behring's Straits. The most southerly of its breeding stations in the New World that has been recorded, is Southampton Island, in the sixty-second parallel, where Captain Lyons found a nest placed in

the bosom of the corpse of an Esquimaux child. Its nest is composed of dry grass, neatly lined with deer's hair and a few feathers, and is generally fixed in the crevice of a rock or in a loose pile of timber or stones. The eggs are greenish-white, with a circle of irregular umber-brown spots round the thick end, and numerous blotches of subdued lavender-purple. On the 22nd July, 1826, in removing some drift timber lying on the beach of Cape Parry, we discovered a nest on the ground, containing four young Snow-birds. Care was taken not to injure them; and while we were seated at breakfast, at the distance of only two or three feet, the parent birds made frequent visits to their offspring, at first timidly, but at length with the greatest confidence, and every time bringing grubs in their bills. The Snow-Buntling does not hasten to the south on the approach of winter with the same speed as the other summer birds; but lingers about the Forts and open places, picking up grass-seeds, until the snow becomes deep; and it is only during the months of December and January that it retires to the southward of the Saskatchewan. It usually reaches that river again about the middle of February; two months afterwards it attains the sixty-fifth parallel of latitude, and in the beginning of May it is found on the coast of the Polar Sea. At this period it feeds upon the buds of the *Saxifraga oppositifolia*, one of the most early of the arctic plants; during the winter its crop is generally filled with grass-seeds. In the month of October, Wilson found a large flock running over a bed of water-plants, and feeding, not only on their seeds, but on the shelly mollusca which adhered to the leaves; and he observes that the long hind claws of these birds afford them much support when so engaged. The young are fed with insects.

DESCRIPTION

Of a *male*, killed at Carlton House, March 30, 1827.

Colour.—Head, neck, rump, wing coverts, spurious wings, basal half of the primaries, all the secondaries, and the whole under plumage pure white: hind head slightly tinged with wood-brown. Back, scapulars, two large coverts of the spurious wings, outer halves of seven primaries, the tertiaries and largest tail covers black, bordered with white, more or less tinged with brown. The three outer pairs of tail feathers white, with a terminal exterior line of black; the rest black, with white borders. *Bill* yellow, tipped with brown. *Legs* pitch-black.

Form.—*Bill* typical. *Palate* very convex throughout, with a narrow groove betwixt it and the cutting margins for the reception of the edges of the lower mandible. The two lateral ridges so conspicuous on the palate of *E. Lapponica*, are merely indicated by faint lines. *Wings* very long and pointed; first feather the longest; lesser quills much truncated, and

notched in the middle. *Tail* strongly notched, although the exterior feathers are only a quarter of an inch longer than the middle ones. *Hind claw* considerably longer and rather straighter than the anterior nails, which are small and thick at the base, but somewhat abruptly pointed: lateral toes equal.

Other *males*, killed at the same time, differ in the proportion of white upon their quills and in the brown tints on the head and rump. The *female* is more strongly tinged with brown, but does not materially differ. In the month of *May*, the loose margins of the plumage having dropped off, both sexes are almost totally black above and pure white below; but early in *winter*, when every feather is entire, the prevailing tint above is yellowish-brown, the black parts shewing faintly through. The throat and breast are tinged with brown, deepest in the female, and encircling the neck.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . .	7	6	Length of bill from rictus .	0	5½	Length of middle nail .	0	4
,, of tail . .	3	0	,, of tarsus . .	0	10	,, of hind toe . .	0	3½
,, of folded wing .	4	4	,, of middle toe . .	0	7	,, of its claw . .	0	5
,, of bill above .	0	5						

[66.] 2. Emberiza (Plectrophanes) Lapponica. (Selby.) *Lapland Buntling.*

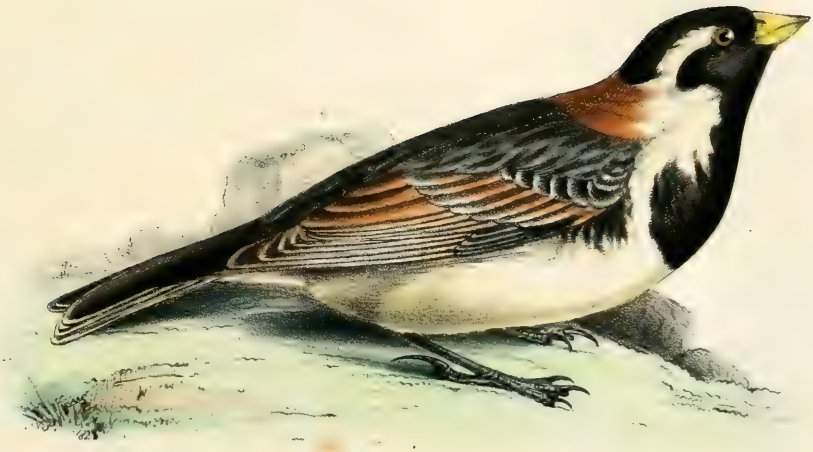
Genus, Emberiza, Linn. *Sub-genus*, Plectrophanes, Meyer.
Fringilla Lapponica. Linn. *Syst.*, i., p. 317. Forst. *Phil. Trans.*, lxii., p. 404, No. 12.*
Lapland Finch. Penn. *Arct. Zool.*, ii., p. 337, No. 259.
Emberiza calcarata. Temm., i., p. 322. Richards. *App. Parry's Second Voyage*, p. 345.
" Plectrophanes calcarata. Meyer, *Tash.*, iii., p. 176, sp. 11."
Plectrophanes Lapponica. Selby, *Linn. Trans.*, xv., p. 156, pl. 1. Young.
Lapland Longspur (*Emberiza Lapponica*). Bonap. *Orn.*, i., p. 53, pl. 13, f. 1, male; pl. , f. 2, female.
Chee-chupeeshew. Cree Indians. (Hutchins.) Kernee-ook-taraiah. Esquimaux.

Plate xlviii.

This handsome bird is common to the northern regions of both continents. According to Forster, it winters on the coast of Hudson's Bay, arriving at Severn river in November, and departing on the approach of spring for the north. During its stay it feeds on grass-seeds, and, Hearne says, also on the buds of the *Pinus microcarpa*†. Some stragglers are occasionally seen, as the

* Forster states his specimen to have been only five inches long, but says it corresponded exactly with Linnæus's description of the species in *Fauna Suecica*.

† This Larch is named "Juniper" by the English residents at Hudson's Bay, who term the Common Juniper, which is also abundant there, the "Crow-berry." The Prince of Musignano mentions, that the Lapland Buntlings haunt the "Cedar-trees" at Severn river, and feed on their berries. This is a mistake, evidently originating in Hearne's notice of the buds of the "Juniper." The *Juniperus Virginianus*, on the berries of which many birds delight to feed, does not grow within several degrees of latitude of Hudson's Bay; and even the more northerly *Thuya occidentalis* does not ascend higher than the fifty-fourth parallel, which is two degrees short of Severn river.



PLECTROPANES LAPPONICA.

London Printed for John Murray Bookseller to the Admiralty January 1st 1829

Prince of Musignano informs us, in the northern parts of the United States. I never met this species in the interior of the fur-countries during winter, and I suspect that its principal retreats in that season are on the borders of Lakes Huron and Superior, and in the country extending to the westward on the same parallel. In the year 1827 it appeared on the plains at Carlton House, about the middle of May, in very large flocks, amongst which were many Shore-larks (*Alauda alpestris*) and a few individuals of *E. picta*. During their stay of ten or twelve days they frequented open spots, where recent fires had destroyed the grass. They came to Cumberland House a few days later in the same season, and there kept constantly in the furrows of a newly-ploughed field. In the preceding year they were seen, though in smaller flocks, in the vicinity of Fort Franklin (lat. 65½°) in the beginning of May; and the crops of those that were then killed were filled with the seeds of the *arbutus alpina*. They breed in the moist meadows on the shores of the Arctic Sea. The nest, placed on a small hillock, among moss and stones, is composed externally of the dry stems of grass, interwoven to a considerable thickness, and lined very neatly and compactly with deer's hair. The eggs, usually seven, are pale ochre-yellow, spotted with brown.

DESCRIPTION

Of a *male*, killed, May 20, 1826, at Fort Franklin.

Colour.—Head, chin, throat, and upper part of the breast velvet-black, margined with white from the ears. A broad stripe of reddish-white from the upper eyelid of each side joins the white bordering the ears; and there are the rudiments of another in the middle of the bright-chestnut nape. Rest of the upper plumage pale reddish-brown, each feather striped in the middle with blackish. Coverts with two obsolete white bands; primaries hair-brown, their exterior edges whitish. The belly and under tail coverts dusky white, sides of the breast and flanks spotted with black. *Bill* bright lemon-yellow, tipped with black. *Legs* pitch-black.

Form typical. There is a roundish knob on the posterior part of the palate, ending forwards in a narrow mæsial ridge: the lateral ridges are more elevated, and form furrows with the cutting margins for the reception of the edges of the lower mandible.

Males, killed at the same period, vary; some having the black of the head quite pure, while in others it is spotted with white, and the white eye-stripe is continued to the bill. In a few, there is a white line down the middle of the hind head.

The *female* differs in having the chin greyish, the black plumage of the head and breast edged with pale-brown and grey, and the chestnut feathers of the nape fringed with white. The white stripes are duller.

After the *autumn moult* the male resembles the female. The darker hue of the breeding dress is produced by the pale margins of the plumage dropping off.

DIMENSIONS

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . .	6	8	Length of bill from rictus	0	6¼	Length of middle nail	0	2½
,, of tail . .	2	9	,, of tarsus .	0	10	,, of hind toe . .	0	4¼
,, of folded wing	3	9	,, of middle toe .	0	7	,, of its nail . .	0	5
,, of bill above .	0	6						

Several *males*, killed at Carlton, were about half an inch shorter than the preceding.

[67.] 3. EMBERIZA (PLECTROPHANES) PICTA. (Swainson.) *Painted Buntling.*

GENUS, Emberiza, LINN. *Sub-genus*, Plectrophanes, MEYER.

CH. SP. EMBERIZA (*Plectrophanes*) PICTA, *capite nigro, lineâ superciliari et maculâ nuchæ auricularibusque et tectricibus alarum intermediis albis, corpore subtus et torque ochreis.*

SP. CH. PAINTED BUNTLING, head black; a line passing over the eye, a small spot on the nape, another on the ears, and a large patch on the wing, white; collar and the whole under plumage brownish buff-yellow.

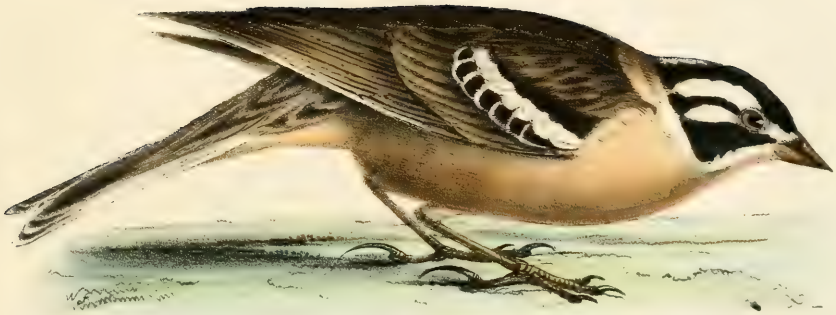
PLATE XLIX.

This species was observed associating with the Lapland Buntlings on the banks of the Saskatchewan, but no information was received respecting its breeding quarters. Only one specimen was obtained.

DESCRIPTION

Of a specimen, killed at Carlton House, April, 1827.

COLOUR.—Head and sides velvet-black, with vestiges of a brownish-white fringe, indicating the autumnal plumage. Three distinct stripes of pure white on the sides of the head, one bordering the chin, another on the ear, and a third above the eye: a less distinct spot on the middle of the nape. The neck above wood-brown; the dorsal plumage and lowest rows of wing coverts blackish-brown, broadly edged with light greyish-brown: the



PLECTROPHANES PICTA.

London Printed for John Murray Bookseller to the Admiralty January 1st 1829

intermediate coverts pure white, and the upper ones entirely black. The quills and tail brownish-black, with narrow white edges: the two outer pairs of tail feathers white, with their outer tips and inner edges brown. *Under plumage* entirely of a colour intermediate between wood-brown and buff-orange. Inner wing coverts white. *Bill* blackish-brown, pale at the base beneath. *Legs* brown.

Form typical, but the bill is more acuminated than that of *Emb. nivalis* and *Lapponica:* the lower mandible is narrower than the upper one. *Palate* similar to that of *E. Lapponica*, with a wider central ridge, and a more distinct rounded tubercle posteriorly. Quills, tail, and feet as in *Lapponica*. The tail exceeds the wings an inch.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . .	6	3	Length of bill above .	0	5¼	Length of middle toe .	0	6⅓
,, of tail . .	2	6	,, of bill from rictus .	0	6½	,, of middle claw .	0	2½
,, of folded wing .	3	6	,, of tarsus . .	0	10	,, of hind claw . .	0	5½

[68.] 4. Emberiza pallida. (Swainson.) *Clay-coloured Buntling.*

Genus, Emberiza, Linn.

Ch. Sp. Emberiza pallida, *luteo-fusca striis nigrescentibus; subtus intacta alba, capite striis maculosis tribus pallidis et duobus nigrescentibus notato, auricularibus fuscescentibus.*

Sp. Ch. Clay-coloured Buntling, clay-coloured brown, striped with blackish; beneath white, unspotted; head with three pale and two blackish macular stripes; ears brownish.

This Buntling, which is even smaller than the *Emberiza pusilla* of the United States, visits the Saskatchewan in considerable numbers. It frequents the farm-yard at Carlton-house, and is as familiar and confident as the common House Sparrow of England.—R.

Neither Wilson nor Bonaparte notice this species. It has much of the habit of *E. pusilla*, which differs, however, very essentially in its more robust and cinnamon-coloured bill, in the chestnut-brown colour of the crown and back, in the bluish-grey tint of the space round the orbit, and in the want of the blackish brown streaks on the head. The tarsi of *pusilla* are rather longer, and the tail is shorter by nearly a quarter of an inch, yet its wing is rather longer.*—Sw.

* From *socialis* our species differs in wanting the bright rufous crown, and in having the ear feathers brown, margined above and below with a darker edge, instead of pure cinereous or lead-colour, without any border. The feet are also generally longer; the tail likewise is longer; but in other respects the proportions are equal. From *palustris* and *melodia* it is still further removed by a much smaller bill and less robust feet.—Sw.

DESCRIPTION

Of a specimen (*sex not ascertained*), killed May 14, 1827.

Colour.—General cast of the ground of the upper plumage light clay-colour, or yellowish-brown, which edges all the feathers of the wings and tail, and becomes French-grey towards the nape; the middle of each feather having a dark blackish-brown stripe down the middle, most conspicuous on those of the back: these spots are crowded into two stripes on the head, between which is a paler line; over each eye is another, much more conspicuous, and whiter. Ears yellowish-brown, with a darker edging, and bordered below with a stripe whiter than the throat. Lesser or smallest wing covers without spots; the row adjoining the greater covers black, with whitish tips; the rest of the covers and quills edged with the same. *Under plumage* white, tinged very slightly with grey, and, on the breast and flanks, with clay-colour. *Bill* and *legs* yellowish, the ridge and tip of the former umber-brown.

Form, nearly typical, taking the *Emberiza schœniclus* as one of the best examples of the group. *Bill* of the same size, but rather more conic than that of *E. pusilla*, and the notch, in both, can scarcely be distinguished; the upper mandible is nearly as thick as the under, and the margins much inflexed. In the structure and proportion of its *wings*, *feet*, and *tail* it perfectly resembles *Emb. schœniclus*.*—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total	5	9	Length of bill above	0	4	Length of middle toe	0	6
,, of tail	2	8	,, of bill to rictus	0	5	,, of its nail	0	2
,, of wing	2	6	,, of tarsus	0	7½	,, of hind toe	0	3
						,, of its nail	0	2¾

[69.] 5. Emberiza Canadensis. (Swainson.) *Tree-Buntling.*

Genus, Emberiza, Linn.
Mountain Sparrow (Hen). Edwards, pl. 269; lower figure.
Fringilla montana†. Forster, *Phil. Trans.*, lxii., p. 405, No. 29.
Tree Sparrow. Penn. *Arct. Zool.*, ii., p. 373, No. 246. Wilson, ii., p. 123, pl. 16, f. 3.
Fringilla Canadensis. Bonap. *Syn.*, p. 109, N. 175.

The Tree-Buntling arrives, in small flocks, on the banks of the Saskatchewan

* The *Fringilla socialis* is also an *Emberiza*, although, perhaps, the most aberrant species in America. The *F. melodia* of Wilson seems to connect this group with *Zonotrichia*. The African *Emberizæ* differ only from the American in the length of their tertiary quills, thus leading to the true Larks.—Sw.

† The error of confounding this species with the *Fringilla montana*, L., of Britain, originated in one of the very few mistakes of Edwards. This error was adopted by Dr. Latham, who, nevertheless, describes our present bird a second time under the name of "Mountain Sparrow," (*Gen. Syn.*, iii., p. 265,) copying his description and name of *Canadensis* from Brisson. Pennant, and subsequently Wilson, rectified this error; yet, notwithstanding all this, Dr. Latham not only continues to confound both these species in his *General History*, but, by a most strange and unaccountable mistake, leaves out his Mountain Sparrow; thus actually destroying the only distinct record in his work of

in the third week in April, and, after a short halt, proceeds farther north to breed. It winters in the United States.

DESCRIPTION

Of a *male*, killed at Penetanguishene, on Lake Huron.

Colour.—Head above, bright chestnut-brown; ear feathers margined superiorly by a stripe of the same; a white superciliary line from the bill to the hind head. Upper surface and sides of the neck bluish-grey. Back, wing coverts, and secondaries blackish-brown, lightly bordered with chestnut-brown. Tips of the greater coverts, lower row of lesser coverts, and the outer edges of the tertiaries, white, forming two bands. Primaries, their coverts, and the tail feathers clove-brown, edged with white, particularly the outer pair of the latter. Tail coverts yellowish-grey. Cheeks and the whole *under plumage* ash-coloured, tinged with yellowish-brown on the flanks. There is also a dark, blackish spot in the middle of the breast. *Bill* dark-brown, paler beneath. *Legs* brown.

Form slightly aberrant. *Bill* small: a small knob on the posterior part of the palate. Third quill the longest, second and fourth nearly equal to it, first a little shorter than the fifth: secondaries truncated and notched. *Tail* divaricated, the feathers being nearly equal, except the middle pair, which are two lines shorter. The hind nail is nearly twice the length of the middle one.

Another specimen, probably a *female*, killed, on the 27th of April, at Carlton, differs in the chestnut-coloured feathers of the head being slightly fringed with white, and in the upper plumage in general shewing less of the chestnut.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total	6	3	Length of bill above	0	4¾	Length of middle toe	0	6½
,, of tail	2	6	,, of bill to rictus	0	5	,, of its claw	0	2¼
,, of wing	3	0	,, of tarsus	0	9½	,, of hind claw	0	4

—R.

The form and general structure of the bill, the great inflection of the mandibles, and, above all, the emarginate tail and lengthened hind claw, render this species a decided *Emberiza*,—although the nearly-equal size of the mandibles points it out as slightly aberrant in its own group.—Sw.

our present species! It might have been found as a distinct species in the *Synopsis*; but, as such, in the *History* it disappears. Such synonymes cannot, of course, be cited. Dr. Latham having thus expunged the name of *Fringilla Canadensis*, his authority can no longer be cited for its correct meaning.—Sw.

[70.] 1. Fringilla (Zonotrichia) graminea. (Swainson.) *Bay-winged Finch.*

Sub-family, Fringillinæ, Swains. *Genus*, Fringilla, Linn. *Sub-genus*, Zonotrichia, Swains.
Grass Finch. Penn. *Arct. Zool.*, ii., p. 375, sp. 253.
Bay-winged Bunting (*Emberiza graminea*). Wilson, iv., p. 51, pl. 31, f. 5.
Fringilla graminea. Bonap. *Syn.*, p. 108, No. 170.

The colours of this bird are well adapted for concealment in the short withered grass of the Saskatchewan prairies, which it frequents. It arrives early in May, and departs, to winter in the southern States, in September. It breeds as low down as Pennsylvania, and was not seen by us beyond the fifty-seventh parallel. Its food is chiefly grass-seeds, and its nest is placed on the ground.

DESCRIPTION

Of a *male*, killed, May 14, 1827, at Carlton House.

Colour.—All the upper parts dull, pale greyish-brown, and dark liver-brown, the latter forming a stripe down the shaft of each feather. Ear feathers tinged with pale chestnut. An ill-defined whitish collar crosses the nape. Lesser wing coverts ferruginous, with dark central streaks. Quills and tail liver-brown, with narrow paler edgings; those of the primaries nearly white. The exterior tail feather is almost totally white, and the next is partly so at its end. *Under plumage* and inner wing coverts white, marked, on the shoulders, breast, and flanks, with stripes of dark-brown. *Bill* dark liver-brown above, and yellowish beneath. *Legs* flesh-coloured.

Form typical. The first, second, and third primaries nearly equal; the fourth half a line, and the fifth a line shorter. The secondaries truncated and notched at the end; the tertiaries long and rather pointed. The *tail* is somewhat notched, though the lateral feathers are slightly graduated. The lateral toes are equal, and nearly as long as the hind toe: the hind claw is longer than the middle one.

The *female* is smaller, but otherwise like the male.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total	6	9	Length of bill above	0	5½	Length of middle claw	0	3
,, of tail	2	9	,, of tarsus	0	10	,, of hind toe	0	4
,, of folded wing	3	3	,, of middle toe	0	6½	,, of its claw	0	4
,, of bill from rictus	0	6						

[71.] 2. Fringilla (Zonotrichia) leucophrys. (Swainson.) *White-crowned Finch.*

Genus, Fringilla, Linn. *Sub-genus*, Zonotrichia, Swains.
Emberiza leucophrys (*White-crowned Bunting*). Forster, *Phil. Trans.*, lxii., p. 403, No. 26; and p. 426, exact description.
White-crowned Bunting. Penn. *Arct. Zool.*, ii., p. 355, No. 221, pl. xvi., No. 221; lowest figure. Wilson, iv., p. 49, pl. 31, f. 4.
Fringilla leucophrys. Bonap. *Syn.*, p. 107, No. 167.
Cussawbawtawseesh. Cree Indians.

This species bears a great resemblance to the White-throated Finch, and is scarcely distinguished from it by the residents at Hudson's Bay. It is, however, a more northern bird, and extends its summer visits to the extremity of the continent. It breeds in all parts of the fur-countries, arriving in the middle of May, and departing early in September to the northern parts of the United States, where it winters. A few appear in Pennsylvania in severe seasons only. It makes short flights, and is much on the ground, feeding on grass-seeds and grubs. The male sings, from a low perch, a short, clear, and pleasant song. The nest is built on the ground, of grass, lined with hair; and the eggs, generally five, are celandine-green, marbled thickly with chocolate-red, particularly at the great end.

DESCRIPTION

Of a *male*, killed at Fort Franklin, lat. 65½°, May 30, 1827.

Colour.—Upper part of the head marked by three stripes of white, separated by two of deep black. The middle of the back and the wing coverts very dark reddish-brown, forming stripes, with narrow, pale brownish-grey margins. The posterior part of the back with the tail coverts hair-brown, and totally unspotted. Quill and tail feathers liver-brown, with pale edgings: the greater primaries edged with dull white, the secondaries with chestnut-brown. Two white bands on the tips of the wing coverts. Chin and belly white; throat and breast French-grey; flanks and under tail coverts brownish-grey. *Bill* reddish-orange, tipped above with brown. *Legs* pale-brown.

Form.—*Bill* a little smaller and more acute than that of *F. Pennsylvanica*. *Wings* moderate, two inches shorter than the tail. Third quill the longest, barely exceeding the second and fourth, and two lines longer than the first and fifth. *Tail* nearly even. *Feet* like those of *F. Pennsylvanica*; outer and inner toe nearly equal, the middle toe lengthened.

The *female* is coloured like the male.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . . .	7	0	Length of bill above .	0	$4\frac{3}{4}$	Length of middle claw	0	$2\frac{3}{4}$
,, of tail . .	3	1	,, of tarsus . .	0	11	,, of hind toe .	0	4
,, of folded wing .	3	1	,, of middle toe .	0	$7\frac{1}{4}$	,, of its claw . .	0	$3\frac{1}{2}$
,, of bill from rictus	0	$5\frac{1}{2}$						

[72.] 3. Fringilla (Zonotrichia) Pennsylvanica. (Swainson.) *The White-throated Finch.*

Genus, Fringilla, Linn. *Sub-genus*, Zonotrichia, Swains.
White-throated Sparrow (*Passer gutture albo*). Edwards, pl. 304.
Le Moineau de Pennsylvanie. Briss. *Orn. Append.*, p. 97.
White-throated Finch. Penn. *Arct. Zool.*, ii., p. 373, No. 248.
White-throated Sparrow (*Fringilla albicollis*). Wils. iii., p. 51, pl. 5, f. 2.
Fringilla Pennsylvanica. Bonap. *Syn.*, p. 108, No. 269.
Oochæ-chimmenaw-kawmawkaw-seesh. Cree Indians.

This handsome species winters in the southern parts of the United States, frequenting in flocks the borders of swampy thickets, and feeding on seeds. It departs for the north about the 20th of April, reaches the Saskatchewan in the middle of May, and spreads throughout the fur-countries, up to the sixty-sixth parallel, to breed. I found a female sitting on seven eggs, on the 4th of June, at Cumberland House. The nest, placed under a fallen tree, was built of grass, lined with deer's hair and a few feathers. Another, found at Great Bear Lake, was lined with the *setæ* of *Bryum uliginosum*. The eggs were very pale mountain-green, thickly marbled with reddish-brown. When the female was disturbed, she made her escape by running silently off in a crouching manner, like a Lark. The male has a clear song of two or three very distinct notes, but without variety.

DESCRIPTION

Of a *male*, killed at Cumberland House, June 1, 1827.

Colour.—Crown of the head blackish-brown, with a central white line. A broad superciliary streak is lemon-yellow from the nostrils to the eye, and white posteriorly. The nape

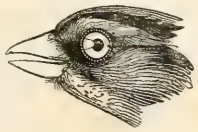
is slightly mottled with brownish-white. The feathers of the upper part of the neck, and middle of the back, and the scapulars, have dark liver-brown centres, which gradually pass first into chestnut-brown, and then into pale wood-brown margins, the chestnut-brown predominating. The rump and tail coverts are broccoli-brown, without edgings. Wing coverts liver-brown, margined with grey, the two lower rows tipped with two white bands. Primaries clove-brown, edged with grey; secondaries and tail feathers liver-brown. *Under surface.*—Chin, middle of the belly, and vent white; throat and breast ash-grey; flanks and inner wing coverts brownish-grey. *Bill* dark horn-colour. *Legs* flesh-coloured.

Form.—*Wings* an inch and a half shorter than the tail; fourth quill the longest, but scarcely passing the third and fifth; eighth equal to the first, which is five lines shorter than the fourth. *Tail* rather long, and rounded at the end. *Hind nail* very little longer than the middle one.

The *female* resembles the male in plumage.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	6	6	Length of bill above	0	6	Length of middle claw	0	2½
,, of tail	3	0	,, of tarsus	0	10½	,, of hind toe	0	4
,, of folded wing	2	9	,, of middle toe	0	7½	,, of its claw	0	3
,, of bill from rictus	0	6½						



[73.] 4. Fringilla (Zonotrichia?) iliaca. (Swains.) *Fox-coloured Finch.*

Sub-family, Fringillinæ, Swains. *Genus*, Fringilla, Linn. *Sub-genus*, Zonotrichia ? Sw.
Fringilla iliaca. Merrem, *Ic. Av.*, p. 37, t. 10.
Rusty Bunting. Penn. *Arct. Zool.*, ii., p. 364, No. 231 ?
Ferruginous Finch. Idem, p. 375, No. 251 ? magnitudine descrepat.
Fox-coloured Sparrow (*Fring. rufa et ferruginea*). Wilson, iii., p. 53, pl. 22, f. 4.
Fringilla iliaca. Bonap. *Syn.*, p. 112, No. 135.

This handsome species breeds in the woody districts of the fur-countries, up to the sixty-eighth parallel of latitude. It constructs its nest in a low bush, of dry grass, hair, and feathers; laying five eggs, of a pale mountain-green tint, marbled with irregular brown spots. The male, perched near his mate, sings cheerfully and

pleasantly. It winters in the United States, arriving in Pennsylvania towards the end of October, in flocks of ten or twelve, which frequent low, sheltered thickets, and are almost continually scraping the ground among the fallen leaves*.—R.

DESCRIPTION

Of a *female*, killed at Great Bear Lake, lat. 65½°, June 7, 1826.

Colour.—Head and neck smoke-grey. Tips of most of the feathers, particularly on the back, chestnut-brown, which becomes bright-ferruginous on the rump, tail, and exterior portion of all the wing feathers. Wing coverts tipped with brownish-white, forming two narrow bars: inner web of the quills umber-brown. Orbits white, mottled with brown. Ground colour of the under plumage, ears, sides of the neck, and middle of the throat, thickly varied with triangular spots of bright chestnut, leaving the middle of the throat almost white: flanks spotted in the same way; but the chestnut is duller, and inclined to black. Middle of the belly and under tail coverts white. *Bill* umber-yellow, dark above. *Legs* yellowish.

Form, aberrant. *Bill*† thicker at the base and much more perfectly conic than that of *F. Pennsylvanica:* the length of both is the same; but, in this, the notch is not perceptible. In the construction of the wing and the tail, these two birds agree; but, in this, the tail is shorter and not so much rounded: the legs also are much stouter, in which, and in the greater development and size of the lateral toes and claws, this species much more resembles *Pipilo*. The hind toe and claw is not much longer than that of *Pennsylvanica*, to which form, upon the whole, our present bird makes the nearest approach. The first and fifth quills are equal, the intermediate ones are the longest, and nearly all of equal length. Tail very slightly rounded.—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	7	6	Length of bill above	0	5	Length of middle toe	0	9
,, of tail	2	9	,, of bill to rictus	0	7	,, of its nail	0	3
,, of folded wing	3	5	,, of tarsus	0	11	,, of hind nail	0	4

* The *Jaboteur* of Le Vaillant (*Ois. d'Af.*, p. 112, f. 1), belonging to the genus *Phyllastrephus*, Sw., is a most remarkable representation of this bird. We feel fully persuaded it is a Rasorial type of form; but of what genus we are at present ignorant.—Sw.

† The bill, in size and shape, perfectly resembles that of *Fringilla grammica*, Bon.; but the cutting margin is nearly straight, not, as in that, obviously sinuated: the feet also are more robust. Both may possibly be aberrant forms of this group.—Sw.

[74.] 5. Fringilla hyemalis. (Linn.) *Black Finch.*

Genus, Fringilla, Linn. *Sub-genus*, ——— ?
Fringilla hyemalis. Linn. *Syst.*, edit. 10, ann. 1757; nec tamen Gmelin, nec Lath.
Fringilla Hudsonias. Forster, *Phil. Trans.*, lxii., p. 406, No. 30; and p. 428, No. 5.
Black Bunting. Lath. *Syn.*, ii., p. 166. sp. 4. Penn. *Arct. Zool.*, ii., p. 359, No. 225.
Snow-bird (*Fringilla nivalis*). Wilson, ii., p. 129, pl. 16, f. 6.
Fringilla hyemalis. Bonap. *Syn.*, p. 109, No. 173.
Pawkaw-choweeseesh. Cree Indians.

This is a very common and familiar bird in the United States, approaching the towns and farm-yards in the winter; but retiring to the high ranges of the Alleghanies and the Rocky Mountains in the breeding season. It is merely a summer resident of the fur-countries, and is not common, nor was it seen by us beyond the fifty-seventh parallel.

DESCRIPTION

Of a specimen, killed at Penetanguishene, on Lake Huron.

Colour.—Head, throat, breast, flanks, inner wing coverts, and dorsal plumage greyish-black, paler towards the rump. Quills clove-brown, edged with grey. Central tail feathers brownish-black; the three outer pairs white, the third tipped outwardly and striped at the base with brown. Belly and under tail coverts white. *Bill* and *legs* pale flesh-colour.

Form.—*Bill* rather small; upper mandible slightly notched; the margins much inflexed. First quill three-tenths of an inch shorter than the three following ones: the third and fourth equal and longest. *Tail* emarginate a quarter of an inch deep*. *Tarsus* and middle toe equal, the latter being much developed: inner toe shorter than the outer one. All the claws fine, slender, and but slightly curved.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	6	4	Length of bill above .	0	5	Length of middle toe .	0	7
,, of tail . .	2	9	,, of bill to rictus .	0	5¾	,, of its nail . .	0	3
,, of folded wing .	3	1½	,, of tarsus . .	0	10	,, of hind nail . .	0	4

* In my specimen, the tail is also emarginate; but the two exterior pairs of feathers are rounded, the outer pair being shorter than the next, which are again shorter than the third pair.—Sw.

[75.] 1. Pyrgita (Pipilo) arctica. (Swainson.) *Arctic Ground-Finch.*

Sub-family, Fringillinæ, Sw. *Genus*, Pyrgita, Antiq. *Sub-genus*, Pipilo, Vieill.

Ch. Sp. Pipilo arctica, *super nigrescens, capite collo pectoreque nigris (in fœminâ ferrugineis), dorso scapularibus tectricibusque albo fasciatis, remige primo et octavo subæqualibus.*

Sp. Ch. Arctic Ground-Finch, with the head, neck, and upper plumage blackish (in the female ferruginous-brown); back, scapulars, and wing covers striped with white; first and eighth quill feathers nearly equal.

Plate li. Male. Plate lii. Female.

Of this sub-genus, which was supposed to consist but of one example, we have now characterised no less than five additional species, four of which are typical. The group appears confined to America, and seems to be the Rasorial type of the true Sparrows (*Pyrgita*): if so, it will consequently touch the circle of the *Tanagrinæ* at that point which brings *Pipilo* into junction with such a form as is seen in M. Vieillot's figure of the *Fringilla Xena* of Linnæus†, a rare and most interesting bird. The northern species comes so very close to the Mexican *Pipilo maculata*, Swains., fully described and figured in the *Illustrations of Ornithology*, that we might, at first sight, be tempted to think they were the same. A more rigid comparison, however, will detect the following distinctions:—

PIPILO ARCTICA*.	PIPILO MACULATA.
Wings with the first quill intermediate between the seventh and eighth. The second and sixth equal; the third, fourth, and fifth longest.	Wings shorter, more rounded; the first quill much shorter than any of the primary or secondary quills. The second and seventh equal; the third and fifth equal; the fourth longest.
Greater quills exceeding the lesser in length six-tenths of an inch.	Greater quills only four-tenths longer than the lesser quills.
Tarsi one inch.	Tarsi one inch, one-tenth.
Hind toe shorter than the claw.	Hind toe and claw equal, or the latter somewhat longer.

By this comparison it appears that, in *Pipilo maculata*, the wings are more

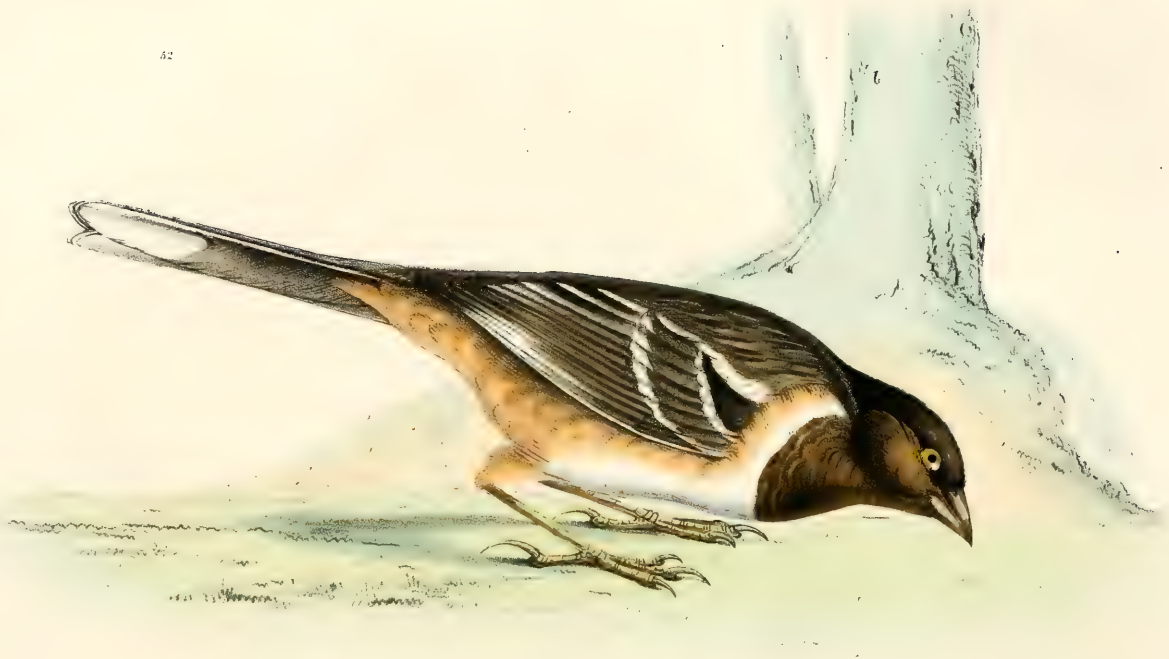
* Two of the specimens exhibit not the least deviation from these characters; the third, which is a smaller, and, in all probability, a younger bird, slightly varies in the quills. We have already shewn, in our notes upon the young Hen-Harriers, that the quill feathers do not gain their true proportions until a perfect adult age.—Sw.

† A specimen was once in the Zoological Society's museum (see *Zool. Journ.*, iii., p. 441), and might have furnished materials for solving one of the most difficult problems in Ornithology; but we are informed that it is no longer in existence. We know not of a single example in England, nor is there one in the Paris Museum. Until the structure of this bird is explained, some little doubt may still hang over the *precise* situation of *Pipilo*. A *seventh* species has just come into our possession from Brazil, and an *eighth* from Mexico.—Sw.

PIPILO ARCTICA.

male

London Printed for John Murray Bookseller to the Admiralty Jan 1st 1830



PIPILO ARCTICA.

female

London Printed for John Murray Bookseller to the Admiralty Jan.ry 1st 1830

feebly constructed; but that this is compensated by an additional strength being given to the feet, which in their whole structure are obviously more robust; while the greater development of the hinder toe and its claw gives to *maculata* a more typical perfection than is seen in *arctica*. In regard to colour, the whole upper plumage of *maculata* is strongly tinged with olive, but which, in the male of *arctica*, is grey*.—Sw.

This handsome Ground-Finch was observed only on the plains of the Saskatchewan, where it no doubt breeds, as one specimen was killed late in July. It arrives in the end of May, and frequents shady and moist clumps of wood, being generally seen on the ground. Its habits, as far as they were observed, correspond with those of the Towhè Bunting, which it much resembles in external appearance. It feeds on grubs, and is a solitary and retired, but not a distrustful bird.

DESCRIPTION

Of a *male*, killed at Carlton House, 1st July, 1827.

Colour.—Head, neck above and below, scapulars, interscapulars, all the wing coverts, and tail, pitch-black; some of the breast feathers fringed with white. A pure white stripe, half the breadth of the web, on the outer edge of each of the scapulars and interscapulars, and the greater and lesser coverts tipped with the same†. The three exterior pairs of tail feathers tipped internally with an oval patch of white, the outer pair also edged with white. Quills hair-brown, the second to the fourth inclusive partially edged with an oblique white line, the rest narrowly edged with light French-grey. Middle of the breast and belly pure white; sides, flanks, and under tail coverts deep and bright ferruginous. Inner wing coverts greyish-white. *Bill* pitch-black. *Legs* pale-brown.

Form, strictly typical.

The *female*, killed on the 29th of May, has the parts which are black in the male ferruginous, except the tail, which is blackish-brown. The upper plumage also exhibits an obscure, but decided olive tinge, particularly on the back and edges of the feathers of the wings. Another female, killed on the 1st of July, differs merely in the crown being glossed with yellowish-brown and the tail with umber. The pure white markings in both

* On comparing our male bird with five specimens of the same sex of *Pipilo erythropthalma*, killed this year, near New York, the following differences, independent of plumage, characterise the present species. The bill is smaller, and the culmen less arched, giving to this a more conic appearance; the claws are more gracile, somewhat longer, and obviously less curved; the tarsi are less robust, and one-tenth of an inch shorter. The first quill feather is manifestly longer, and this exercises a material difference on the general formation of the wing; so that, in *Arctica*, the first and eighth quill feathers are nearly equal in length; whereas, in *P. erythropthalma*, the first quill feather is scarcely equal to several of the secondaries. This latter character alone is sufficient to demonstrate their specific difference.—Sw.

† In *P. maculata* the upper part of the neck, and particularly the back, is saturated with olive-brown, the black being confined to a line on the inner side of the white stripes above mentioned. The stripes themselves and the tips of the covers are delicately tinged half way with ferruginous. The posterior quills are edged with obscure olive. The sides and under plumage as in *P. arctica*.—Sw.

agree with those of the male, without being tinged, as in *P. maculata*, with ferruginous-brown.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	8	9	Length of bill from rictus	0	8	Length of middle nail	0	4
,, of tail . .	4	0	,, of tarsus . .	1	1	,, of hind toe .	0	5
,, of folded wing .	3	6	,, of middle toe . .	0	9	,, of its nail . .	0	6
,, of bill above .	0	6½						

[76.] 1. Pyrrhula (Corythus) enucleator. (Cuvier.) *Pine Bullfinch.*

Sub-family, Pyrrhulinæ, Swains. *Genus*, Pyrrhula, Auct. *Sub-genus*, (?) Corythus, Cuvier.
The Greatest Bullfinch. Edwards, pl. 123, young male; pl. 124, female.
Loxia enucleator. Forster, *Phil. Trans.*, lxii., p. 402, No. 24.
Pine Grosbeak. Penn. *Arct. Zool.*, ii., p. 348, No. 209. Wils., i., p. 80, pl. 5, f. 2.
Pyrrhula enucleator. Temm. i., p. 333. Sabine, *Frankl. Journ.*, p. 675. Bonap. *Syn.*, p. 115, No. 193.
Wuskuneethow. Cree Indians.

Plate liii. Female.

The Pine Bullfinch, the largest species of its family yet discovered, inhabits the northern parts of both continents; but, as it leads a quiet, retired life in the gloomiest recesses of the pine-forests, it is seldom seen. It was not observed by the Expedition higher than the sixtieth parallel. Pennant states it to be merely a summer visitor of Hudson's Bay; but this is a mistake, for Mr. Drage, Clerk of the California, observed it at York Fort on the 25th of January, 1747; and Mr. Isham also informed Edwards that it continues there all the winter. It builds its nest on the lower branches of a tree, and feeds chiefly upon the seeds of the white-spruce.—R.

DESCRIPTION

Of a *male*, killed on the Saskatchewan in winter.

Colour.—General tint of the head, neck, and body, red, the base of the plumage bluish-grey, each feather above marked near the tip with a darker spot, which is abruptly bordered with light and dull crimson, rather brighter on the rump and upper tail covers. General colour of the wings and tail dark cinereous or grey-brown: wing covers forming two white bands; tertials edged with white; lesser covers and edges of the quills strongly tinged with crimson; tail feathers the same. *Under plumage* more red than the upper; except the middle of the body, belly, vent, and under tail covers, which are bluish-grey. *Bill* blackish-brown, beneath paler. *Legs* black.

Form.—The *bill* is strong, and as thick at the base as the head. The upper mandible is

PORYTES ENTOLEATOR, Jam.

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entire, and much curved just at the tip; its breadth is equal to its depth; the commissure slightly arched. Lower mandible shorter, and also very thick. Nostrils thickly covered by incumbent hairs. Wings rather pointed, yet not long, as, when folded, they are nearly three inches shorter than the tail. The first quill is slightly shorter than the second, which hardly exceeds the third. *Tail* broad and forked, the depth of the fork being four lines. Tarsi strong, but very short for the size of the body. Middle toe much developed, and greatly longer than the hind toe, which again is shorter than the tarsus: inner toe rather shorter than the outer. Claws narrow, attenuated, not much curved, and acute.—Sw.

A *female*, killed in winter at the same place, has the head, ears, rump, and tips of the back and neck feathers honey-yellow; the rest of the plumage bluish-grey. The wings and tail are like those of the young male, except that the margins, which are crimson in the latter, are honey-yellow in the female, and the white bands are not so broad. The under plumage is ash-grey, glossed with honey-yellow. The *old male* is said to have the head, neck, and under plumage orange.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	11	3	Length of bill to rictus	0	8¼	Length of middle nail	0	3½
,, of tail	4	3	,, of tarsus	1	0	,, of hind toe	0	6
,, of wing	4	8	,, of middle toe	0	8½	,, of its nail	0	4½
,, of bill above	0	6½						

[77.] 1. Loxia leucoptera. (Gmelin.) *White-winged Crossbill.*

Sub-family, Pyrrhulinæ, Swains. *Genus*, Loxia, Briss. Linn.
White-winged Crossbill. Dixon, *Voy. to the N. W. of Amer.*, p. 356. Lath. *Syn.*, ii., p. 108, sp. 2.
Crossbill Grosbeak. Penn. *Arct. Zool.*, ii., p. 347, No. 208.
Loxia leucoptera. Gmel. *Syst.* i., p. 844.
Loxia falcirostra. Lath. *Ind.*, i., p. 371, sp. 2.
White-winged Crossbill (*Curvirostra leucoptera*). Wils., iv., pl. 31, f. 3. Young male.
Loxia leucoptera. Bonap. *Syn.*, p. 117, No. 195.
Pemmoo-koo-chæ-shees (*Crooked-beak*). Cree Indians.

This Crossbill inhabits the dense white-spruce forests of the fur-countries, feeding principally on the seeds of the cones. It ranges through the whole breadth of the continent, and probably up to the sixty-eighth parallel, where the woods terminate, though it was not observed by us higher than the sixty-second. It is mostly seen on the upper branches of the trees, and, when wounded, clings so fast, that it will remain suspended after death. In September it collects in small flocks, which fly from tree to tree making a chattering noise; and in the depth of winter it retires from the coast to the thick woods of the interior.

DESCRIPTION

Of a *young male* after the first moult.

Colour.—Head, neck, back, rump, breast, and belly aurora-red, with dark chocolate-red and liver-brown central marks, less visible on the under plumage. Region of the bill wood-brown. Upper tail coverts pitch-black, tipped with greyish-white borders. Vent and under tail coverts brownish-white, with pointed black centres: flanks blackish-grey, glossed with yellowish-brown. *Wings* and *tail* brownish-black, the former crossed by two broad white bars. *Bill* dark horn-colour.

Form, typical. *Wings* long, pointed, the first quill being the longest; lesser quills truncated, and deeply notched at the end. *Tail* rather short, deeply emarginate. *Feet* strong; tarsi very short, exceeded by the length of the hind toe and claw, which are much developed: lateral toes nearly equal. All the claws strong, attenuated, sharp, and fully curved.

As the bird acquires its *mature* plumage, the red parts change to greenish-yellow, the rump assuming a purer yellow. The female and young, *before their first moult*, are greenish, with yellowish rumps; their bellies whitish, streaked with blackish-brown*.

Dimensions

Of the *young* bird.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	6	3	Length of bill to rictus	0	7½	Length of middle nail	0	5
,, of tail	2	7	,, of tarsus	0	7½	,, of hind toe	0	3¾
,, of wing	3	6	,, of middle toe	0	5	,, of its nail	0	5¼
,, of bill above	0	7						

[78.] 1. Fringilla purpurea. (Wilson?) *Crested Purple Finch.*

Genus, Fringilla, Linn.
Purple Finch. Wils. i., p. 119, pl. 7, f. 4?
Fringilla purpurea. Bonap. *Syn.*, p. 114, No. 191?

We feel almost persuaded that there are two distinct species of these "Purple Finches," which not only Wilson, but all the modern ornithologists of America have confounded under the same name. We have before us a female specimen of one of these, which is not only smaller in all its proportions than that brought home by the Expeditions, but has a bill more resembling that of

* The *Loxia curvirostra*, Bonap. (*L. Americana*, Wils.), did not come under our notice, though Forster describes a specimen from Hudson's Bay under this name. We have not enumerated it as an inhabitant of the fur-countries, fearing that Forster might have agreed with Pennant in considering the white-winged species to be merely a variety of the European *curvirostra*.—R.

LINARIA TEPHROLEUCA.

London Printed for John Murray Successor to the Late Mr. Jan.

the *Pine Grosbeak:* the culmen is curved towards the end; whereas in the Arctic specimen the bill is shorter and almost perfectly conic. Does this result from age? We think not. The future examination of more specimens may decide the point. As for the *Pyrrhula frontalis*, Bon., the sexes of which are now before us, it is not only clearly distinct from either, but belongs, in all probability, to a different group.—Sw.

This bird was seen by us on the banks of the Saskatchewan only, where it feeds on willow-buds. It is a summer visitor, arriving in the month of May.—R.

DESCRIPTION

Of a *male*, killed at Carlton House, May, 1827.

Colour.—Head, rump, throat, and sides of the breast and belly crimson, inclining to lake; back, scapulars, wing coverts, and longer tail coverts the same, mixed with grey, and striped in the centres with dark chocolate. Lores and region of the bill greyish-brown. Quills and tail clove-brown, edged with crimson. Belly and under tail coverts ash-grey. *Bill* pale horn-colour. *Legs* brown.

Form.—*Bill* thick, short, conical, acute; sides of both its mandibles swollen; margin of the upper mandible sinuated, its tip perfectly entire. Under mandible strong, equal to or slightly exceeding the upper one. *Nostrils* small, concealed. Crown feathers narrow, capable of erection. *Wings*. Four first quills nearly equal, the third being the longest; fifth almost half an inch shorter. *Tail* deeply forked. *Tarsi* stout, and shorter than the middle toe. *Claws* much compressed: hind one longest, and fully curved.

Dimensions

Of a *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	6	3	Length of bill to rictus	0	6½	Length of middle claw	0	2½
,, of tail	2	5	,, of tarsus	0	8½	,, of hind toe	0	4½
,, of wing	3	5	,, of middle toe	0	6½	,, of its claw	0	2¾
,, of bill above	0	5¼						

[79.] 1. Linaria (Leucosticte) tephrocotis. (Swainson.) *Grey-crowned Linnet.*

Sub-family, Coccothraustinæ, Swains. *Genus*, Linaria, Auct. *Sub-genus*, Leucosticte, Sw.

Ch. Sp. Linaria (*Leucosticte*) tephrocotis, *castanea, vertice nigrescenti, occipite cinereo-albescenti, tectricibus alarum minoribus tectricibusque caudæ et hypochondriis apicibus roseis.*

Sp. Ch. Grey-crowned Finch, chestnut-brown; crown blackish; hind head greyish-white; lesser wing covers, tail covers, and flanks, tipped with rosy-red.

Plate l.

This new and striking species, of which only a single specimen was obtained,

is obviously an aberrant form in the genus *Linaria;* but as we know not, at present, the remaining types, its more immediate affinities must remain unexplained. The vertical breadth of the bill and the arched commissure bring it into comparison with the Bullfinches.—Sw.

DESCRIPTION

Of a specimen, killed on the Saskatchewan, May, 1827.

Colour.—General aspect above and beneath of a peculiar dark chestnut-brown or deep umber-colour, a little lighter on the belly, and darkest on the chin, neck, and ears. Forehead brownish-black, gradually changing into shining ash-grey, almost white on the hind head. The nasal feathers whitish and very glossy. General colour of the wing feathers, tail, and its covers, clove-brown; lesser wing covers broadly edged with bright peach-blossom red, changing its tints in different lights: the greater are more slightly edged with red; and the quills and tail have only narrow pale margins. Rump, and more particularly the upper tail covers broadly tipped with rose-red; flanks and under tail covers the same, but much paler.

Form.—*Bill* very conic, thick, strong, broad, entire; the margins of both mandibles much inflexed, and the commissure, as in the Bullfinches, slightly arched, without any abrupt angle at the base. *Nostrils* concealed by imcumbent feathers; and there is another tuft at the angle of the mouth, defending the sides. *Wings* very long and pointed, the three first quills nearly equal, the rest rapidly diminishing in succession: lesser quills truncate and emarginate. *Tail* moderate, deeply forked. *Tarsi* much longer than in the typical *Linariæ*, and obviously formed more for walking: they appear about one-third longer than the hind toe. Anterior toes fully developed; the middle much longer than the hinder one; the lateral ones nearly equal: the tarsi longer than the middle toe and claw. The three anterior toes all slightly, but unequally connected. Claws slender, acute, not much curved; hinder one the longest.—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	6	9	Length of bill from rictus	0	6½	Length of middle nail	0	2½
,, of tail	2	8	,, of tarsus	0	9	,, of hind toe	0	4½
,, of folded wing	4	0	,, of middle toe	0	6	,, of its nail	0	3
,, of bill above	0	6						

[80.] **2. Linaria minor.** (Ray.) *Lesser Redpoll.*

Sub-family, Coccothraustinæ, Swains. *Genus*, Linaria, Auctor.
Linaria rubra minor. Raii, *Syn.*, p. 91, A. 9.
Fringilla Linaria. Forster, *Phil. Trans.*, lxii., p. 405, No. 28.
Lesser Redpoll. Penn. *Arct. Zool.*, ii., p. 379, No. 262.
Arctic Finch. Idem, p. 379, A. Young.
Lesser Redpoll (*Fringilla Linaria*). Wilson, iv., p. 42, pl. 30, f. 4, male; and ix., p. 126.
Fringilla Linaria. Selby, *Brit. Orn.*, 8vo., p. 279. Bonap. *Syn.*, p. 112, No. 184.
Tecurmaseesh. Cree Indians.

This neat and hardy little bird is one of the few permanent residents in the fur-countries, where it may be seen in the coldest weather, on the banks of lakes and rivers, hopping among the reeds and carices, or clinging to their stalks. Although numerous throughout the year, even in the most northern districts, a partial migration takes place, as large flocks visit Pennsylvania for a month or two in severe winters.—R.

The instructive and highly-interesting account of this bird, given by our friend Mr. Selby in the text to his *Illustrations of British Ornithology*, first awakened our suspicions on the true station of the Linnets; and these have been confirmed by a minute inspection of all the British species, which, with his accustomed liberality, Mr. Selby has sent for our examination. As the Scansorial type of the *Coccothraustinæ*, or, more properly, of the *typical Finches*, this genus should have many of the habits of the *Parianæ*, which Mr. Selby's testimony fully substantiates. Its connexion to *Carduelis*, the Tenuirostral type, is quite obvious; while its affinity to the *Pyrrhulinæ*, by means of the two preceding species, at once shews its aberrant situation. We suspect that both our *Linaria tephrocotis* and Wilson's *Fringilla purpurea* are subordinate forms, or sub-genera of *Linaria;* but this cannot be ascertained without a more perfect knowledge, by analysis, of the neighbouring groups than we have yet acquired.—Sw.

DESCRIPTION

Of a *male*, killed, May 20, 1826, at Fort Franklin, lat. 65¼°.

Colour.—Frontal band, chin, and line before the eyes, dark liver-brown or blackish; crown blood-red; sides of the chin, the throat, breast, flanks, and rump, carmine-red, mingled with much white. General upper plumage light yellowish-grey, darkly streaked with blackish-brown; wings and tail feathers the same, edged with white. Wing covers with two narrow bars of dull white: belly white. *Bill* yellowish, darker above. *Legs* black.

Form, typical. *Bill* perfectly entire, the tip very acute, the commissure straight. *Nostrils* concealed by incumbent feathers. *Wings* long, pointed: first, second, and third quills nearly of equal length. *Tail* acutely forked; depth of the fork half an inch. *Tarsi* slender,

typically shorter, or not much longer than the hind toe, which is equal to the middle toe: anterior toes very short, the lateral equal. *Claws* slender, acute, fully curved, the hinder one much developed, particularly in old birds. The *feet*, in fact, are as much Scansorial as those of the *Meliphagidæ*, both groups being Scansorial types of their respective circles.*—Sw.

DIMENSIONS.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	5	6	Length of bill from rictus .	0	5½	Length of middle nail .	0	3¼
,, of tail . .	2	6	,, of tarsus . .	0	7	,, of hind toe . .	0	3½
,, of folded wing .	3	0	,, of middle toe . .	0	4	,, of its nail . .	0	4¾
,, of bill above .	0	4½						

[31.] 1. CARDUELIS AMERICANA. (Edwards.) *American Goldfinch.*

SUB-FAMILY, Coccothraustinæ, SWAINS. *Genus*, Carduelis, AUCTOR.
The American Goldfinch (*Carduelis Americana*). EDWARDS, pl. 274.†
Golden Finch. PENN. *Arct. Zool.*, ii., p. 371, No. 242.
New York Siskin. IDEM, p. 372, No. 243. (Male changing his plumage, and the male in his winter dress taken for the female.)
Fringilla tristis (*Yellow-bird or Goldfinch*). WILSON, i., p. 20, pl. 1, f. 2. Adult male. BONAP. *Syn.*, p. 111, No. 181. *Orn.*, i., p. 57, pl. 8, f. 4. Female.

This very gay Goldfinch is one of the tardiest summer visitors of the fur-countries; and it retires southwards in September, after a stay of less than three months. Wilson says it frequently assembles in great numbers on the same tree to bask and dress in the sun, singing in concert for half an hour together, much like the English Goldfinch; which it also resembles in becoming very familiar in captivity. Its eggs are very obtuse at one end and acute at the other. They are white, surrounded at the thick end with a few spots of yellowish-brown and a greater number of very subdued lavender-purple.—R.

DESCRIPTION

Of a *male*, in full breeding *plumage*, killed 29th June, 1827.

COLOUR.—General colour of the upper and under plumage of the body bright gamboge-yellow, the crown forehead, wings and tail being deep black: rump and tail covers above and below white. Wing covers dull olive-yellow, the last range black and tipped with white; greater covers the same. The lesser quill feathers are all edged and tipped more or less with

* As the true generic distinctions of *Linaria* have not been rightly understood or, indeed, explained, they are here given.—Sw.

† We see no reason why Linnæus should have changed the prior name of *Americana*, given to this species by its first describer, for one so peculiarly inappropriate as that of *tristis*.—Sw.

white. Tail black; each feather with a long, white, oval spot on the inner web near the tip. *Bill* and *legs* ochraceous.

Form, typical. *Bill* conical, a little compressed; ridge of the upper mandible more inclined to curve than that of the lower; cutting margin of the upper mandible angulated at the base, and sinuated. *Nostrils* concealed by incumbent bristles. *Wings* long, pointed; first and fourth equal, second and third rather longer. *Tail* short, deeply forked. *Tarsi* rather short, but longer than the hind toe, which is also much shorter than the middle toe; lateral toes nearly equal. *Claws* slender, acute, well curved; the hinder claw not much longer than the middle one*.

The *female*, according to the Prince of Musignano, is brownish-olive above and greenish-yellow beneath; the crown without any black; but the wings and tail, although duller, are like those of the male. The *young birds* of the *first year* of course resemble the female.—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	5	0	Length of bill from rictus .	0	5	Length of middle nail .	0	2¼
,, of tail . .	1	10	,, of tarsus . .	0	6	,, of hind toe . .	0	2¾
,, of folded wing .	2	6	,, of middle toe . .	0	5	,, of its nail . .	0	2¼
,, of bill above .	0	4¾						

[82.] 1. Coccothraustes vespertina. (Cooper.) *Evening Grosbeak.*

Sub-family, Coccothraustinæ, Swains. *Genus*, Coccothraustes, Briss. *Sub-genus*, ——?
Fringilla (Coccothraustes) vespertina. Cooper, *Ann. Lyc. New York*, i., p. 220.
Bonap. *Syn.*, No. 133. *Ornithol.*, ii., p. 75, pl. 15, f. 1.
Seesebasquit-pethaysish (*Sugar bird*). Cree Indians.

This gay and very remarkable bird, hitherto but little known to naturalists, is a common inhabitant of the maple groves on the Saskatchewan plains: whence its native appellation of "Sugar-bird." As it arrives with the last of the summer visitors, we quitted that district, in the beginning of June, without having an opportunity of seeing it; but, subsequently, Mr. Prudens, the Chief Trader at Carlton House, kindly sent us specimens. It frequents the borders of Lake Superior also, and the eastern declivity of the Rocky Mountains, in lat. 56°; but its habits are unknown.—R.

* We incline at present to the belief that *Carduelis* is the most aberrant group; that is, the Tenuirostral type of this sub-family: yet its remarkably close connexion to Linaria is such as to make us doubt whether two such genera, if strictly natural, would not exhibit greater variation. The American genus *Tiaris*, Sw., undoubtedly leads to the Tanagers; but whether, between *Tiaris* and *Linaria*, there is not a more strongly marked form than *Carduelis*, may well be questioned. It is curious, however, to remark how much in colour the Goldfinches resemble the Yellow and Black Orioles (*Oriolinæ*), which constitute in the same manner the Tenuirostral sub-family of the Merulidæ.—Sw.

We are indebted to Mr. Cooper, one of the most philosophic of the American naturalists, for the first account of this elegant and striking bird, the only true Coccothraustes hitherto discovered in the New World. It agrees, in every essential point of structure, with that form which is spread over the temperate latitudes of the Old World, and to which belong the *Common Hawfinch* of Europe and the Fork-tailed Hawfinch of China (*C. melanura*). With this type we at present rank the Common Greenfinch (*C. cloris*) as an aberrant example. It still remains, however, to detect, by analysis, its true station in the genus, or, in other words, the higher groups it is intended by Nature to typify. We suspect it is not pre-eminently typical. The bill, although particularly large, betrays a decided weakness of structure, by the under mandible being much narrower and smaller than the upper; while in the sub-genus *Guiraca* both mandibles are of equal thickness. This inequality is one of the most striking characters of the *Tenuirostres*, and of nearly all groups and types which represent that tribe. Of this the *Musophagidæ*, the *Ceblepyrinæ*, the *Oriolinæ*, &c., are striking instances. The yellow and black plumage of the present species* immediately reminds us of an Oriole, an Icterus, and a Goldfinch; which are unquestionably Tenuirostral types: it is, therefore, highly probable that this form possesses the same relation. There is a concealed, but a very singular analogy between our European *Coccothraustes* and the *Bombycilla garrula;* and this latter also forms part of a group—the *Ampelidæ*, which likewise represents the *Tenuirostres*.—Sw.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, 1829.

Colour.—A line round the base of the bill, continued in a stripe to the eye, the crown, lesser coverts, primaries, and tail, with its upper coverts, deep black: inner tips of the two outer tail feathers pale. Posterior greater coverts, secondaries, and tertiaries pure white. Front, superciliary bands, dorsal and ventral plumage, under tail coverts, and inside of the wings, gamboge-yellow. All the head beneath the eye, with the nape, umber-brown, that colour gradually blending, on the breast and back, with the yellow. Thigh feathers black, edged with yellow. *Bill* greenish-yellow. *Legs* flesh-coloured.

Form, with reference to the *European Hawfinch*, typical; but the wings and tail are proportionably longer, and the bill rather smaller: the ends of the lesser quills are not dilated: in every other respect the structure of the two species is precisely the same.

Female.—Head and dorsal plumage hair-brown, edged, particularly on the neck, with

* *Coccothraustes* also represents the typical weaving birds of Africa and India (*Ploceus*, Cuv.), in which black and yellow are the predominant colours.—Sw.

greenish-yellow. Wings, tail, and its upper coverts black; the posterior greater coverts, bases of the posterior primaries, and exterior tips and inner borders of the secondaries and tertiaries white, stained with yellow; all the primaries edged with the same. Tips of the superior tail coverts, the vent, and whole of the under coverts with the inner tips of the tail feathers pure white. *Under plumage* yellowish-grey: inner wing coverts gamboge yellow.*

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . . .	8	3	Length of bill above . .	0	9	Length of middle toe .	0	9
„ of tail . . .	3	0	„ of bill to rictus .	0	10	„ of hind toe . .	0	5
„ of wing . .	4	4	„ of tarsus . .	0	9½	„ of their nails . .	0	4

[83.] 2. Coccothraustes (Guiraca) Ludoviciana. (Swainson.) *Rose-breasted Grosbeak.*

Genus, Coccothraustes, Briss. *Sub-genus*, Guiraca, Swains.
Loxia Ludoviciana. Linn. *Syst.*, p. 306.
Red-breasted Grosbeak. Penn. *Arct. Zool.*, ii., p. 350, No. 212.
Red-breasted Finch. Idem, p. 372, No. 245. Old male.
Dusky Grosbeak. Idem, p. 351, No. 216. Female.
Spotted Grosbeak. Idem, p. 350, No. 213. Young.†
Rose-breasted Grosbeak (*Loxia rosea vel Ludoviciana*, Gen. Ind.). Wils. ii., p. 135, pl. 17, f. 1. Male.
Pyrrhula Ludoviciana. Sabine, *Frank. Journ.*, p. 675.
Fringilla Ludoviciana. Bonap. *Syn.*, No. 189. *Ornithol.*, ii., p. 79, pl. 15, f. 2. Female.
Ooskammahæoo. Cree Indians.

A specimen of this brilliant bird was obtained near the Saskatchewan on Sir John Franklin's first Expedition; but we had not the good fortune to meet with it on the second Journey. The Prince of Musignano is of opinion that it migrates extensively, breeding in the north or in the mountains, and retiring southwards in winter, or descending to the plains; being, however, by no means numerous in any known district. It frequents the deepest recesses of the forest, where, during the solemn stillness of the night, it sings in a clear mellow, and harmonious tone.—R.

* The Prince of Musignano says that the female does not differ in plumage from the male. His authority for the female plumage, as he never saw living examples, must be the same as ours, viz. the report of those who sent the skins from the fur-countries. The specimen we have described above as the female is very nearly equal in dimensions to the male. The bill is rather longer, more attenuated, and obscurely notched.—R.

† These synonyms are assigned to this species on the authority of Mr. Sabine and the Prince of Musignano; and, if they are correct, Dr. Latham has of this one bird, in its different stages of plumage, made *four* species in *two* genera, viz. *Loxia Ludoviciana*, *obscura*, and *maculata*, and *Fringilla purpurea* of the *Index Ornithologicus*, which Pennant has copied.

DESCRIPTION

Of a mature *male*, from near Philadelphia, in Mr. Swainson's museum.

Colour.—*Bill* yellowish-white (pure white in the live bird, according to Wilson). General colour of the upper plumage, together with the whole of the head and throat, deep black. The lesser covers are marked with a conspicuous white spot, which is placed in the middle of this part of the wing, and which, consequently, does not form a band: most of the greater covers are terminated externally, by an oval white spot, particularly those nearest the tertials; similar spots, but still smaller, are at the ends of the tertials and secondary quills: primary quills deep black for rather more than half their length, the basal part being pure white. Lower part of the back and rump white, irregularly varied with black. *Tail* deep black, the three outer feathers having a large oval white spot on their inner webs, occupying more than half the length of the feathers. *Under surface.*—Front of the breast with a large patch of bright and deep carmine or rose-colour, narrowing into a line down the middle of the body; under wing covers the same: rest of the under plumage white, with a few black stripes down the middle of the flank feathers. *Legs* and *feet*, according to Wilson, light-blue. *Eyes* hazel.

Form, typical of the American division of the genus. *Bill* strong, culmen gently curved, profile of the gonyx straight; under mandible rather thicker and deeper than the upper, with an internal tooth at its base; commissure considerably angulated towards the base, and sinuated beyond,—both having a slight and almost obsolete notch at their tips. *Nostrils* round, not concealed. *Wings* moderate, rather pointed: second and third quills equal and longest; first and fourth equal, the rest considerably shorter: lesser quills with their ends abruptly truncated and somewhat emarginate. *Tail* rather lengthened; all the feathers equal*, except the two outer pair, which are slightly graduated. *Tarsi* obviously longer than the hallux. Inner toe shortest; hinder claw broader, stronger, and more curved, but not so long as that of the middle toe.

The reader is referred to Wilson for an elaborate description of the *female* and *young male*.

Dimensions.

	Inches.		Inches.
Total length	8	Length of tarsus	$\frac{9}{10}$
,, of tail	3	,, of middle toe and claw	$\frac{8}{10}$
,, of folded wing	$4\frac{1}{10}$	,, of hind toe and claw	$\frac{6}{10}$
,, of bill from rictus	$\frac{12}{20}$		

—Sw.

* Wilson says "forked;" this must be a mistake: probably he alluded to its being divaricated, that is, the feathers on each side forming a sort of fasciculus: this is observed in all birds having the shaft of the *middle* tail feathers very near the outer margin.—Sw.

[84.] 1. Pyranga rubra. (Swainson.) *Scarlet Black-winged Tanager.*

Sub-family, Tanagrinæ, Swains. *Genus*, (?) Pyranga, Vieillot. *Sub-genus*, ——?
Scarlet Sparrow. Edwards, pl. 343.
Canada Tanager. Penn. *Arct. Zool.*, ii., p. 369, No. 237. Male.
Olive Tanager. Idem, No. 238. Female and Young.
Cardinal de Canada. Briss. *Orn.*, iii., p. 348, pl. 2, f. 5.
Scarlet Tanager. Wils., ii., p. 42, pl. 11, f. 3, male; f. 4, female.
Pyranga Erythropis. Vieil. *Ency. Méth.*, p. 799.
Tanagra rubra. Bonap. *Syn.*, p. 105, No. 160.

This splendid bird was seen by us on Lake Huron only; and its most northern range is probably the forty-ninth parallel. Wilson's history of its manners, wound up as it is with an elegant and tender compliment to his venerable friend Mr. Bartram, is one of his happiest efforts, and leaves nothing to be added by casual observers.—R.

DESCRIPTION

Of a *male*, killed at Penetanguishene, on Lake Huron.

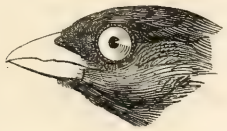
Colour of the whole plumage, except the wings and tail, most vivid carmine-red. Wing coverts, posterior secondaries, and middle tail feathers, black; the primaries, adjoining secondaries, and lateral tail feathers, brown; insides of the wings and tail beneath grey. *Bill* pale horn-colour. *Irides* cream-yellow. *Legs* bluish-grey.—Form, typical.

The *male*, after the autumn moult, is dappled with greenish-yellow.

The *female* is green above and yellow below; the wings and tail brownish-black, edged with green.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	7	0	Length of bill from rictus	0	7½	Length of middle nail	0	2½
,, of tail	3	0	,, of tarsus	0	9	,, of hind toe	0	3½
,, of wing	3	8	,, of middle toe	0	6¼	,, of its nail	0	3
,, of bill above	0	7						



STURNIDÆ.—*STARLINGS.*

The gregarious habits of the *Fringillinæ*, which, like the Rasorial order, derive their chief sustenance from seeds scattered on the ground, prepare us for entering upon this family, distinguished by the same economy, but composed of larger and more perfectly constructed birds. The Starlings are readily known by the length and conic form of their bills, a structure admirably adapted to their modes of life. Like the Crows, they frequent meadows, plains, and newly-ploughed land, picking insects from beneath the surface; while, to preserve their affinity with the Finches, they feed also upon hard seeds: the former habit requires a lengthened bill, the latter a conic one; and thus, while Nature applies the means to the end, she preserves a beautiful affinity between these three conterminous families.

The forms among the *Sturnidæ*, although comparatively few, are yet, in general, so definitely graduated, that it is truly surprising the primary divisions should ever have been mistaken. The following table will explain the circular succession of the whole family.*

		Sub-families.
1. *Typical group.*	Bill more or less conic, both mandibles thickened and suddenly angulated at their base; the tip obtuse and obsoletely notched.	Sturninæ.
2. *Sub-typical group.*	Bill more compressed and thrush-like, the base not angulated; the tip of the upper mandible distinctly notched.	Lamprotorninæ.
3. *Aberrant group.*	Bill more or less conic; the tip acute and entire.	Scaphidurinæ. Icterinæ. Agelainæ.

The geographic distribution of these divisions is unusually regular. The two typical sub-families are restricted to the Old World; while the aberrant forms are almost entirely confined to the New. Our present remarks will chiefly regard the latter.—The birds which we now arrange under the sub-family of

* The *Sturnidæ* of Mr. Vigors are divided also into sub-families, of which the following are made the typical genera:—1. *Icterus*; 2. *Sturnus*; 3. *Lamprotornis*; 4. *Pastor*; 5. *Buphaga*.—*Zool. Journ*, ii., p. 398. No birds seem to have perplexed ornithologists more than the American Starlings. Since the time of Daudin (1800), our knowledge of them has been progressively retrograding; and the institution of the genus *Psarocolius*, which has been made to comprehend them all, renders the confusion complete.—Sw.

are manifestly those among the *Sturnidæ* which first meet us upon quitting the *Fringillidæ*. From the latter they are at once known by the length and size of their legs; while the bill, although sometimes very short, assumes a much more lengthened appearance than that which is universally prevalent among the true Finches and Buntlings (*Fringillinæ*). The passage between the two groups is probably made by the *Icterus fringillarius* of Spix, a most interesting bird, which we have not yet seen: it is probably either a *Molothrus*, Sw., or belongs to the tenuirostral type of the *Fringillinæ*, since another curious bird, from China, obligingly communicated to us by Mr. Gray*, seems to be intermediate between the American *Agelainæ* and the African *Emberizæ*. But, however doubtful we may feel as to the true nature of this form, we can have no hesitation in pointing to the Cow Buntling of Wilson as the tenuirostral type of the *Agelainæ*, and as further exhibiting one of the strongest and most beautiful analogies, perhaps, in creation. The only birds that have yet been discovered to commit their eggs to the incubation of others, are the Cuckoos in the Old World and the Cow Buntlings in the New: both groups thus mutually represent each other, and both typify the *Tenuirostres* in their own circles. The rigid tail of *Dolichonyx oryzivorus*, Sw.†, would lead us to suspect that bird to be the scansorial type, did we not recollect that this character likewise belongs to *Chætura*, Stev., one of the most typical groups of the *Fissirostres*, which tribe we consider it really represents. We rest this belief principally on the fact that the genus *Sturnella* of M. Vieillot has been considered by all writers as forming the passage to the true Starlings: this genus would, therefore, stand on the *opposite* side of the circle to that occupied by *Dolichonyx*, and, consequently, typify the *Rasores*, not only in its manners, but in its short, rounded wings and variegated plumage. We have thus, by means of the *Troupiale tacheté* (Pl. Enl. 448), a perfect union of the three aberrant genera of the *Agelainæ*,—namely, *Sturnella*, *Molothrus*, and *Dolichonyx*,—into one circle. Let us premise, however, that we have not yet been able to define with sufficient precision those distinctions which characterize the two typical forms of this division.

The little attention that has hitherto been given to the structure of the American *Sturnidæ* prevents us from elucidating the

* We are glad of this opportunity to express our thanks conjointly to this able and indefatigable zoologist, not only for the uniform attention he has favoured us with in his official capacity in the British Museum, but for the free use of many rare birds from other sources, and for the loan of several foreign and costly publications from his own library. —R. and Sw.

† *Synop. of Mexican Birds*, No. 54.

ICTERINÆ

with that precision they require; we shall, therefore, merely intimate their leading distinctions. The only genera hitherto defined, are *Cassicus* *, *Xanthornus*, and *Icterus*. These, and some others possessing peculiar characters, are strikingly distinguished from the *Agelainæ* by their short and differently constructed feet; indicating at once an arborial, instead of a terrestrial economy. The former are almost always upon the ground; while the true *Icterinæ*, as we know from personal observation, are as constantly seen upon trees: they feed upon insects, the stamina of flowers, and soft fruits; and the feet, accordingly, have a peculiar construction.

The genus *Cassicus*, erroneously supposed to be the typical form, is, in fact, the Rasorial; and we are thus prepared to enter upon the

SCAPHIDURINÆ,

or Boat-tailed Grakles, by means of the new genus *Scaphidurus* †. In the singular development of tail which belongs to this sub-family, we have a marked character, which distinctly separates them from the two last divisions. They are larger and more powerful birds, having the manners of the Crows, while their whole economy clearly points out the mode in which Nature enters among the *Corvidæ*. Few species of the Boat-tails have yet been defined,—originating, in all probability, more from the imperfect manner in which they have been examined, than from a real deficiency of species. They are all of a glossy black colour; but the species are sufficiently distinguished by size, the form of the bill, tarsi, &c. We possess seven species, and are acquainted with several more; but this number is insufficient to give us very accurate ideas of the subordinate forms. Certain, however, it is, that the superb *Astrapia gularis* of M. Vieillot, the Gorget Paradise-bird of Linnæan systematists, belongs to this group; but whether this form is sub-typical or rasorial, must be left to future investigation: it possesses the feet and boat-shaped tail of the *Scaphidurinæ* and the bill of the *Lamprotorninæ*, or true Grakles. This union of characters sufficiently indicates, in our opinion, the true affinities of this singularly rare and magnificent bird. In this group, also, do we place the Rusty Grakle; since we strongly suspect it is one of those links by which Nature has united the *Scaphi-*

* *Cassiculus*, Sw., is a sub-genus, or type of form, subordinate to *Cassicus*.—Sw.

† Upon erroneous information we proposed this name as a substitute for *Quiscalus*, Vieil.; but as this latter is not, as we then understood, already used in Botany, we now restrict the name of *Scaphidurus* to that genus of which the *Oriolus niger* is the type.—Sw.

durinæ to the *Agelainæ*. There are, nevertheless, too many intermediate gradations of form still wanting, to allow of an accurate demarcation being traced of the aberrant circle of the *Sturnidæ*. The sub-typical group formed by the

LAMPROTORNINÆ,

or Grakles, is entirely restricted to the hot latitudes of the Old World. The plumage is glossed with the most brilliant metallic colours that can be conceived; and they seem to represent, in their native regions, the pilfering and devastating Maize-birds (*Agelainæ*) of America. The form of their bill differs from that of all their congeners: it is compressed, slightly curved, destitute of an angle at the commissure, and, in fact, completely resembles that of a Thrush. The feet are very robust, and the tail in general is short. The scansorial type is the genus *Ptilonorhynchus* of Kuhl, arranged by methodists with the Crows. The true Starlings and Pastors compose the typical sub-family of

STURNINÆ,

where we have, as usual in every natural group, a beautiful representation of each of the five divisions we have now, for the first time, characterised. As none of these types, however, occur in the New World, we must reserve their elucidation for another opportunity.

[85.] 1. MOLOTHRUS PECORIS. (Swainson.) *Cowpen or Cuckoo-Bunt.*

SUB-FAMILY, Agelainæ. *Genus*, Molothrus*, SWAINS.
Cowpen Finch. PENN. *Arct. Zool.*, ii, p. 371, No. 241.†
Cow Bunting (*Emberiza pecoris*). WILS., ii., p. 145, pl. 18, ff. 1, 2, and 3.
Fringilla pecoris. SAB. *Frankl. Journ.*, p. 676.
Agelaius pecoris. SWAINS. *Syn.*, No. 55.
Icterus pecoris. BONAP. *Syn.*, p. 53, No. 53.

Wilson's highly interesting observations satisfactorily prove that this curious bird has, in common with the Cuckoo of Europe, the habit of depositing its eggs in the nests of smaller birds, to whom it entrusts the safety of its future offspring. It arrives in the fur-countries in May, in company with the Maizebirds and Boat-tails, ranges to the sixtieth parallel, departs in September, and collects in large flocks in Pennsylvania during the following month, after which it retires to winter

* Μολοθρος, *qui non vocatus alienas ædes intrat.*

† Latham has introduced this bird, under different specific names, in three several genera, in his *Index Orn.*; viz. *Sturnus junceti*, *Oriolus minor*, and *Fringilla pecoris*.—R.

in the southern parts of the United States and in Mexico*. It returns to Pennsylvania in March, and entirely disappears again in June, having then gone further north. Its food consists of grain, grass, and worms, particularly the intestinal ones, which are found among the excrements of the ruminant animals in spring: on this account it associates with the cattle, frequently resting familiarly on their backs like the Common Starling. Its egg is roundish, seven lines and a half long, and of a greenish-white colour, with rather small crowded and confluent irregular spots of pale liver-brown, intermixed with others of subdued purplish-grey.—R.

DESCRIPTION

Of an adult *male*, killed near New York. (In Mr. Swainson's museum.)

Colour.—The whole head, neck, throat, and breast chestnut-brown, inclining in some to umber, and in others to yellowish-brown. The rest of the plumage deep blackish-brown, richly glossed on the body with bluish-green, and, adjoining the chestnut-brown of the head, with blue-purple: the gloss on the quills and tail is very faint.

Form, typical. *Bill* short, conic, Finch-like; the culmen or ridge is convex and very slightly arched, the tip not depressed, and both mandibles entire. *Wings* long, pointed; the first quill generally longest, the second very nearly equal; lesser quills truncate and slightly emarginate. *Tail* slightly forked in the middle; but its sides rounded (as in the *Ceblepyrinæ*), reaching an inch and a quarter beyond the wings. *Tarsi* lengthened; claws slender; anterior lateral toes equal.

The Georgian specimens are richer in colour, and the brown of the head and neck fuller.

The *young* are at first altogether brown, and the breast is spotted; the black begins to appear at the end of the second month, and at three months the plumage is complete.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	7	3	Length of bill from rictus	0	8½	Length of hind toe	0	5½
,, of tail	3	1½	,, of tarsus	1	0⅓	,, of its claw	0	3⅔
,, of wing	4	3						

—Sw.

[86.] 1. Dolichonyx oryzivorus. (Swainson.) *Sharp-tailed Rice-bird.*

Sub-family, Agelainæ. *Genus*, Dolichonyx, Swains.
Rice-bird. Edwards, pl. 291.
Rice-bunting. Penn. *Arct. Zool.*, ii., p. 360, No. 225. Wilson, ii., p. 48, pl. 12, ff. 1 and 2.
Icterus agripennis. Bonap. *Syn.*, p. 53, No. 54.
Dolichonyx oryzivorus. Swains. *Syn.*, No. 54.
Seecawk-petheesew (*Skunk-bird*). Cree Indians.

This singular bird, known in the United States by the provincial names of

* Young and adult specimens, from the Table-land of Mexico, are in our museum.—Sw.

"Bob-link," "Rice-bird," and "Reed-bird," is termed by the Cree Indians "Skunk-bird," from the similarity it bears to the quadruped of that name in its white markings. It enters Georgia from the southward in May, and reaches the fifty-fourth parallel, which appears to be its most northern limit, in the beginning of June. While on its passage, it frequents moist places and newly-ploughed fields, feeding on flies and caterpillars, and also on the early wheat and barley in its milky state. As soon as the young are able to fly, they resort to the corn-fields of New England, and commit great depredations: in the fur-countries they feed on the seeds of the *Zizania aquatica*, which does not grow to the northward of the Saskatchewan. Its eggs are purplish-white, blotched with lavender-purple and spotted with umber round the thick end: they are seven lines long.—R.

DESCRIPTION

Of a *male*, killed in June, 1827, on the Saskatchewan.

Colour.—Head and whole under plumage velvet-black. Fore part of the back, the shoulders, wings, and tail pitch-black; ends of the quills and tail fading to brown; and the greater coverts, exterior quills, tertiaries, tail, and thigh feathers more or less broadly edged with brownish-yellow. Middle of the back lead-grey; scapulars, rump, and upper tail coverts white. A large patch of ochre-yellow on the nape and back of the neck. *Bill* black. *Legs* brown.

Form, typical. *Bill* short, conic, Finch-like, angulated at the base, and slightly sinuated beyond; culmen convex, nearly straight; tip compressed and entire. *Wings* long and pointed; the two first quills much longer than the others, which rapidly become shorter: lesser quills distinctly emarginate. *Tail* rounded, scansorial, the outer webs very narrow, the inner broad, and the shafts projecting in very fine, lengthened points. *Tarsi*, toes, and claws lengthened and slender; the latter but slightly curved.

The plumage of the bird above described, and of others killed at the same date, is deprived of all its loose edgings, being so much worn as to be evidently on the point of moulting. Wilson says that, in June, the male assumes the dress of the *female*, which has the back streaked with brownish-black; the whole under parts dull yellow; and the bill flesh-coloured. In some of our specimens, killed in June, the front feathers are still slightly edged with the yellow of the preceding season.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total	7	9	Length of bill above	0	$7\frac{1}{4}$	Length of middle toe	0	$10\frac{1}{4}$
,, of tail	3	0	,, of bill to rictus	0	$8\frac{1}{4}$	,, of its nail	0	$3\frac{1}{3}$
,, of wing	4	0	,, of tarsus	1	0	,, of hind toe	0	6
						,, of its nail	0	$4\frac{1}{4}$

[87.] 1. Agelaius phœniceus. (Vieillot.) *Red-winged Maize-bird.*

Sub-family, Agelainæ, Swains. *Genus*, Agelaius, Vieil.*
Red-winged Oriole. Penn. *Arct. Zool.*, ii., p. 255, No. 140.
Red-winged Starling (*Sturnus predatorius*). Wils., iv., p. 30, pl. 30, ff. 1 and 2.
Agelaius phœniceus. Vieil. *Enc. Méth.*, ii., p. 714. Swains. *Syn.*, No. 56.
Oriolus phœniceus. Sab. *Frankl. Journ.*, p. 673.
Icterus phœniceus. Bonap. *Syn.*, p. 52, No. 51.

This shewy, but destructive bird winters in vast numbers in the southern districts of the United States, and in Mexico*, frequenting swampy places, and roosting at night among the reeds. It begins to enter Pennsylvania towards the end of March, but seldom reaches the Saskatchewan before the beginning of May, and it does not pass beyond the fifty-seventh parallel. On its first arrival in the fur-countries it feeds on grubs; but as soon as the grain sown in the vicinity of the trading posts begins to germinate, it associates itself with the Saffron-headed Maize-birds and Boat-tails, and is occupied the whole day in tearing up and devouring the sprouting plants, returning to the work of devastation as often as driven away. It breeds in swampy places, in Pennsylvania, in the beginning of May, and on the Saskatchewan about the 20th of June. Its eggs are greenish-white, with a circle of spots and streaks of dark liver-brown round the thick end, one or two scattered spots of the same, and some faint blotches of purplish-grey.—R.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May 3, 1827.

Colour, a rich velvet-black: the scapulars, interscapulars, secondaries, greater wing coverts, and upper and under tail coverts faintly edged with yellowish-brown. Lesser wing coverts vivid scarlet; the lower row buff-orange, with whitish tips. *Bill* and *legs* black.

Form, typical. Ridge of the *bill* flattened, as if pared down by a knife, and rather concave than straight: the tip of the upper mandible depressed. *Wings* moderate; the second, third, and fourth quills nearly equal; the first shorter than these and longer than the fifth: lesser quills truncate, and distinctly notched at the ends. *Tail* rounded, the three outer feathers being graduated. *Tarsi* long; *claws* lengthened and slender.

A *female*, killed in June, has the plumage much worn, the yellowish-brown edgings which exist earlier in the season having mostly dropped off. *Dorsal plumage* and ear feathers liver-brown, the latter bounded by pale orange, which is also the colour of a dotted superciliary line. Lesser wing coverts reddish-brown, with reddish-orange borders. *Under*

* Mr. Swainson has seen several specimens from Mexico.

plumage, having throughout central stripes of liver-brown, bordered on the chin, throat, and breast with pale tile-red, and on the belly and flanks with greyish-white*.

A *young male* of the *first year*, in Mr. Swainson's museum.—Upper plumage rich blackish-brown, narrowly edged with yellowish-brown. Eye stripe, ear feathers, chin, and lateral borders of the quills, tail, and under plumage buff-orange. Scarlet mark on the wing very distinct; but its feathers are edged at the tip with black, and it wants the inferior border of buff-orange.

A *young female* differs in the upper plumage being more broadly edged with a darker brown, and in the lesser wing coverts being liver-brown, with yellowish-brown borders, there being no vestige of the scarlet mark.

DIMENSIONS.

	Male. Inch.	Lin.	*Female.* Inch.	Lin.		*Male.* Inch.	Lin.	*Female.* Inch.	Lin.
Length total	9	6	8	6	Length of tarsus	1	1	1	0
„ of tail	3	6	3	3	„ of middle toe	0	10½	0	9
„ of wing	5	0	4	1½	„ of middle nail	0	4	0	4½
„ of bill above	0	11½	0	10½	„ of hind toe	0	6	0	4⅔
„ of bill to rictus	1	0	0	11	„ of hind nail	0	5	0	4½

[88.] 2. AGELAIUS XANTHOCEPHALUS. (Swains.) *Saffron-headed Maize-bird.*

SUB-FAMILY, Agelainæ, SWAINS. *Genus*, Agelaius, VIEIL.
Icterus icterocephalus. BONAP. *Orn.*, i., p. 27, pl. 3, fig. 1 and 2.
Icterus (Xanthornus) xanthocephalus. IDEM, *Syn.*, p. 52, No. 52.

This bird, which is very numerous in the interior of the fur-countries, was first added to the American *Fauna* by the Expedition of Major Long to the Rocky Mountains in 1820. I procured specimens in the spring of the same year, and despatched them to England along with many other objects of natural history; but they were irrecoverably lost after their arrival in London; and were not, therefore, described by Mr. Sabine in the narrative of Sir John Franklin's first Journey. The species ranges in summer to about the fifty-eighth parallel, but was not seen by us to the eastward of Lake Winipeg, nor has it been found by the American naturalists east of the Mississippi. It arrives on the latter river, from the southward, in the middle of May, and by the 20th of the same month it reaches the Saskatchewan, where it associates with the *Redwings*, and, being more numerous, commits even greater havoc in the corn-fields. The manners of the two species are precisely alike.

* Wilson denies that the female has any traces of the red mark on the wing; but the specimen above described agrees with several authenticated females in the collection.—R.

DESCRIPTION

Of a *male*, killed May 28, 1827, on the Saskatchewan.

Colour.—Head, nape, sides of the neck, throat, breast, and a few of the vent feathers, bright saffron-yellow. Primary and six greater secondary coverts white, tipped with black. The orbits, lores, and the remainder of the plumage velvet-black. *Bill* and *legs* pitch-black.—Some male specimens have the yellow plumage of the top of the head fringed with black.—R.

Form.—*Bill* rather stouter in proportion than that of *A. phœniceus*, the base of the culmen flattened, but the contour very slightly arched: the tip of the upper mandible slightly depressed, and entire. First, second, and third *quills* nearly equal: some of the lesser quills sinuated at the tip of the outer web; and others, towards the tertials, shew a tendency to form an obsolete point in the middle. *Tail* very slightly rounded. *Legs* very long: the *tarsi* proportionally longer than those of *A. phœniceus: claws* shorter, and but slightly curved.—Sw.

The *female* is described by the Prince of Musignano* as being eight inches and a quarter long. The general colour uniform dark brown, the edges of the feathers somewhat lighter. No white on the wing. Frontlet and supra and infraorbital lines, which unite on the ears, greyish-ferruginous. Chin and throat whitish. A large rounded patch of vivid-yellow on the breast.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total . .	10	6	Length of bill to rictus .	0	10½	Length of middle claw .	0	4
,, of tail . .	4	6	,, of tarsus . .	1	4½	,, of hind toe . .	0	7
,, of wing . .	5	6	,, of middle toe . .	1	0	,, of hind claw . .	0	4¾
,, of bill above .	0	10						

Some males are an inch and a half longer than the preceding: their members in proportion.

[89.] 1. Sturnella Ludoviciana. (Swainson.) *Crescent Starelet.*

Sub-family, Agelainæ, Swains. *Genus*, Sturnella, Vieil.
Crescent Stare. Penn. *Arct. Zool.*, ii., p. 330, No. 192.
Meadow Lark (*Alauda magna*). Wils., iii., p. 20, pl. 19, f. 2.
Sturnella collaris. Vieil. *Gal. des Ois.*, pl. 90.
Sturnus Ludovicianus. Sab. *Frankl. Journ.*, p. 674. Bonap. *Syn.*, p. 50, No. 48.
Peesteh-atchewusson. Cree Indians.

This beautiful bird arrives about the 1st of May on the Saskatchewan, beyond which it was not seen by us: it is only partially migratory in Pennsylvania.

* Through some accident, we brought home no female specimens of this bird.—R.

In the fur-countries it frequents open plains and meadows, hiding itself in the grass. It rises on the approach of a sportsman, flies heavily, though quickly, for about two hundred yards, and then alights on the ground, where it will generally remain until it is almost trodden upon, before it takes a second flight. It often perches on the top of a low bush, and utters a loud, mellow, and plaintive whistle, which its Cree appellation is intended to express. The crops of the individuals we killed were filled with fragments of coleopterous insects*.

DESCRIPTION

Of a *male*, killed May 8, 1827, on the plains of the Saskatchewan.

Colour.—*Upper plumage* liver-brown, bordered with pale-brown, the darker colour assuming the form of narrow bars on the posterior part of the back, lesser quills, and middle tail feathers. *Greater quills* greyish-brown, slightly barred externally: edge of the wing yellow. Three exterior pairs of *tail feathers* white, their outer tips and inner borders barred and coloured like the three central pairs†. Three white stripes on the upper surface of the *head*, the lateral ones changing to bright yellow before the eyes. Sides of the neck, breast, flanks, and under tail coverts whitish, with blackish-brown central spots, which are rare on the latter. *Under plumage* rich king's-yellow: a large pitch-black, horse-shoe shaped mark on the breast, its limbs rising on the sides of the neck and cut by a white spot. *Bill* dark-brown above; its sides and under surface bluish-grey. *Legs* flesh-coloured.

The *female* differs merely in the black crescent on the breast being skirted with grey.—R.

Form, typical. The *bill*, like that of the Starling, is considerably depressed on its outer half, and there is a faintly marked indenture on each side of the upper mandible; indicating the first development of the notched bill by which the true Starlings are known. The lesser quills are truncate, but the shaft projects sufficiently to form a *mucro* or little point.—Sw.

Dimensions

Of a Saskatchewan and a Georgian *male* specimen.

	Saskatch. Inch.	Lin.	*Georgian.* Inch.	Lin.		*Saskatch.* Inch.	Lin.	*Georgian.* Inch.	Lin.
Length total	11	0	8	6	Length of tarsus	0	5	1	$7\frac{1}{5}$
,, of tail	3	0	3	0	,, of middle toe	1	0	1	$1\frac{1}{5}$
,, of wing	5	0	4	$3\frac{3}{5}$	,, of middle nail	0	$4\frac{1}{2}$	0	$4\frac{1}{5}$
,, of bill on its ridge	1	3	1	$2\frac{2}{5}$	,, of hind toe	0	9	0	$8\frac{2}{5}$
,, of bill to rictus	1	$4\frac{1}{2}$	1	$3\frac{3}{5}$	,, of hind nail	0	5	0	6

Some of the Saskatchewan *male* specimens measure only nine inches and a half in length.

* This species is subject to very considerable variation, not only in its colour, but in its size and in the proportionate length of the bill. The northern specimens are larger and much paler than those we possess from Georgia; while the Pennsylvanian ones are intermediate between the two, proving the influence of climate, or the prevalence of particular races.—Sw.

† In some specimens the white extends to four pairs of feathers.

[90.] 1. Icterus Baltimore. (Daudin.) *Baltimore Hangnest.*

Sub-family, Icterinæ, Swains. *Genus*, Icterus, Briss.
Baltimore Oriole. Penn. *Arct. Zool.*, ii., p. 257, No. 142, pl. 12; right-hand figure.
Oriolus Baltimorus (*Baltimore-bird*). Wils, i., p. 23, pl. 1, f. 3, male; pl. 53, f. 4, female.
Yphantes Baltimore. Vieil. *Gal. des Ois.*, pl. 87; very good.
Oriolus Baltimorus. Sab. *Frankl. Journ.*, p. 673.
Icterus Baltimore. Bonap., *Cat.* No. 49.

This richly coloured bird visits the United States in great numbers in the summer, and ranges through the central districts of the fur-countries, up to the fifty-fifth degree of latitude, arriving on the Saskatchewan plains on the 10th of May. It affects the vicinity of man, frequenting familiarly the crowded streets of cities, and building its ingenious pensile nest in orchards.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, June 27, 1827.

Colour.—Head, neck above and below, forepart of the back, scapulars, lesser quills, with their coverts, and middle of the tail, brownish-black; primaries and their coverts umber-brown; all the quills and the greater coverts edged with white. Lesser coverts, posterior part of the back, tail coverts, base and tip of the tail, the shoulders, breast, and whole under plumage, vivid dutch-orange. *Bill* and *legs* bluish-black. *Irides* brown.

Form, typical. *Bill* perfectly conic, entire, and very acute. *Nostrils* for the most part naked. *Under mandible* thicker at the base than the upper one. *Wings* moderate; the three first quills nearly equal: lesser quills slightly and obliquely emarginate. *Tail* rounded, the three outer feathers only being graduated, the middle ones forked or slightly divaricated. *Tarsi* moderate, stout; claws strong, broad, and fully curved.

A *female*, killed on the 8th of July.—Upper aspect of the head, neck, and fore part of the back brownish or honey-yellow, spotted with black: posterior part of the back gradually changing to orange-yellow, without spots; the tail orange, glossed with brown. Orange mark on the wing, the chin, and throat, spotted with black. *Under plumage* orange-yellow.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	8	0	Length of bill to rictus	0	9¾	Length of lateral toe	0	3½
,, of tail	3	0	,, of tarsus	0	10	,, of hind toe	0	5
,, of wing	3	10	,, of middle toe	0	8	,, of its nail	0	3½
,, of bill above	0	8						

The *female* is half an inch shorter.

[91.] 1. Quiscalus versicolor. (Vieillot.) *Common Purple Boat-tail.*

Sub-family, Scaphadurinæ, Swains. *Genus*, Quiscalus, Vieil.
Purple Grakle. Penn. *Arct. Zool.*, ii., p. 263, No. 153.
Boat-tailed Grakle. Idem, p. 264, No. 154.
Purple Grakle (*Gracula quiscala*). Wils, iii., p. 44, pl. 21, f. 4.
Quiscalus versicolor. Vieil. *Gal. des Ois.*, pl. 108; male; very inaccurate.
Icterus quiscala. Sab. *Frankl. Journ.*, p. 673.
Quiscalus versicolor. Bonap. *Orn.*, i., p. 42, pl. 5, f. 1. *Syn.*, No. 56.

The first appearance of this bird on the Saskatchewan plains is very striking. It arrives from its winter-quarters in the southern parts of the United States in the beginning of May, the males and females in separate flocks of from twenty to a hundred, which perch in crowds on the leafless branches of the trees, their plumage shining in the sun with metallic splendor*. For some days they fly about the plains, making a chuckling noise, and feeding on insects; but as soon as the young blade raises itself above the earth in the corn-fields, which happens at Carlton House about the middle of May, they descend, in company with the Maize-birds and Cuckoo-bunts, to devour the sprouting seeds. Soon after this period the Boat-tails pair, and build their nests, like rooks, several on the same tree; and occasionally, both in the fur-countries and United States, they choose for their singular building site the loose sticks which form the base of the Osprey's nest, apparently neither dreading nor inconvenienced by the bird of prey, which rears its young above them.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May 12, 1827.

Colour.—Head, neck, and breast, deep violet, with greenish and purplish-red metallic reflections. Back, belly, and scapulars bronze-coloured. *Wings* reflecting auricula-purple, with green and blue tints; the primaries reddish-black. *Tail* exhibiting various shades of imperial-, auricula-, and plum-purples, the central feathers slightly bronzed. The base of the plumage is mostly blackish-grey, the metallic lustre being confined to the tips. There is a brilliant play of colours as the bird moves in the light. *Bill* and *legs* black. *Irides* bright gamboge-yellow.—The *female* is two inches shorter; but when in full plumage is as brilliant as the male.

Form, typical. *Bill* lengthened; upper mandible not so thick as the under one, being bent over, and projecting beyond it: the commissure not angulated at the base, but sinuated in the middle, where it forms a lengthened festoon: tips entire. *Wings* moderate, rather

* These shewy flocks are rendered still more remarkable by many of the individuals having their tails twisted so as to bring the edges vertical both when flying and when on the perch.—R.

pointed; the first and fifth quills equal; the third and fourth also equal; and the second intermediate between the first and third: lesser quills and tertiaries distinctly emarginate at their tips. *Tail* cuneate, concave; the shafts of the two middle feathers central. Feet very strong; claws strong, rather thick, and fully curved; anterior lateral toes unequal.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	13	0	Length of bill above .	1	2½	Length of middle toe .	1	0
,, of tail . . .	5	6	,, of bill to rictus .	1	5	,, of its nail . .	0	4½
,, of wing . . .	5	8	,, of tarsus . .	1	4½	,, of hind toe . .	0	6½
						,, of its nail . .	0	5

Some *males* measure an inch more than the above, others two inches less. The *female* is mostly about eleven inches long.

[92.] 1. Scolecophagus ferrugineus. (Swainson.) *Rusty Maggot-eater.*

Sub-family, Scaphadurinæ. *Genus*, Scolecophagus*, Swains.
Turdus, No. 22. Forster, *Phil. Trans.*, lxii., p. 400.
Rusty Grakle (*Gracula ferruginea*). Wils., iii., p. 41, pl. 21, f. 3.
Quiscalus ferrugineus. Bonap. *Syn.*, p. 55, No. 57.
Chuck-chuck-kaioo, or Chuck-chuck-kawthoo. Cree Indians.

This sombre-coloured bird is the most northern of the American *Sturnidæ*, its summer range reaching to the sixty-eighth parallel, or as high as the woods extend. It arrives on the Saskatchewan in the end of April, and at Great Bear Lake, lat. 65°, by the 3rd of May, generally in pairs, which for a time frequent the sandy beaches of secluded lakes, and feed on coleopterous insects. Later in the season it joins the flocks of the Maize-birds, Boat-tails, and Cuckoo-bunts in committing depredations in the corn-fields. Mr. Hutchins informs us that, in June, when it breeds, its principal food consists of maggots. He says the nest is attached to the lower branch of a tree, and is formed of moss and grass. The eggs, usually five, are of a dark hue, spotted with black. It winters in the southern parts of the United States.

* Th. σκωληξ, *vermis*.

DESCRIPTION

Of a *male*, killed at Fort Franklin, lat. 65°, May 15, 1826.

Colour, deep and uniform black, with greenish and bluish reflections. A few feathers on the neck, breast, belly, and the under tail coverts slightly edged with yellowish-brown. *Bill* and *legs* black.—The *female*, killed at the same time, is mostly blackish-brown above; the rump and tail coverts blackish-grey. Plumage of the neck, fore part of the back and wings edged narrowly with chestnut-brown. *Tail* greenish-black. Under plumage blackish-grey, edged with dull wood-brown.—R.

An *adult female*, in full plumage, in Mr. Swainson's collection, has the general colour of the back, wings, and tail blackish-grey, with a peculiar faint gloss of greenish, hardly definable; between the eye and bill is a velvet-like line of black, which shades the under eyelid. The whole of the head and neck is rusty or chestnut-brown, unbroken by any other colour, darkest above and palest beneath: this colour also forms a pale stripe over the eyes. The rusty or chestnut-brown of the head and neck gradually diminishes on the upper part of the back, where it merely tips the blackish-grey feathers and the edges of the wing covers and tertiary quills. This specimen was from Georgia.

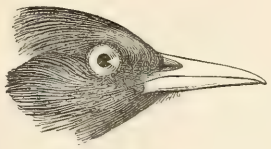
Form.—*Bill* slender, pointed, both mandibles equal; presenting in its general structure much similarity to that of the genus *Quiscalus;* but the base of the commissure has a distinct angle, while the margins beyond, although inflexed, are not at all sinuated. *Wings* moderate, the first and fourth quills equal, and the second longest: lesser quills slightly emarginate. *Tail* moderate, slightly rounded, the feathers broad, and not boat-shaped. *Tarsi* lengthened; claws slender: the feet, claws, &c., being similar to those of *Agelaius phœniceus*.—Sw.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	9	4	Length of bill above	0	10	Length of middle toe	0	11¼
,, of tail	3	6	,, of bill to rictus	0	11¾	,, of its nail	0	2¾
,, of wing	4	7½	,, of tarsus	1	2½	,, of hind toe	0	5¼
						,, of its nail	0	5¼

The *female* is very little smaller.



CORVIDÆ.—*CROWS.*

There are some singular and highly interesting peculiarities, exclusively belonging to groups pre-eminently typical, which demand the deepest attention of the philosophic naturalist. One of the most striking of these is the great difference between those forms which belong to perfect and natural genera, *strictly so termed**. We might cite the restricted genera *Tanagra*, *Cashmorhynchus*, and *Coccothraustes* as remarkable examples of this fact, and as groups which would well repay the most minute analysis. This peculiarity sometimes extends to higher groups; and in the present family, the most pre-eminently typical in the whole circle of Ornithology, it is more striking than in any other. It is, perhaps, to this circumstance that we must attribute the very imperfect manner in which the internal relations of the *Corvidæ* have been illustrated, and the artificial distribution that has been made of the groups it contains. Our space, indeed, will not permit us at present to throw much light upon the subject, further than what may be gained by studying the following table of the sub-families:—

Analogies.		Sub-families.
	1. *Typical group.*	
Conirostres.	Wings lengthened, obliquely pointed; lateral toes equal.	*Corvinæ.*
	2. *Sub-typical group.*	
Dentirostres.	Wings shorter, rounded, convex; lateral toes unequal.	*Garrulinæ.*
	3. *Aberrant group.*	
Scansores.	Bill short, entire, light; feet short	*Crypsirinæ.*
Tenuirostres.	* * * * *	?
Fissirostres.	Bill slender, lengthened; feet short	*Fregilinæ.*

A glance at the modern arrangements will show how essentially we differ from all ornithologists who, like us, have attempted to elucidate this very intricate family. The tests, however, by which every series of animals thought to be

* A genus, in whatever higher group it may occur, can never, strictly speaking, be pronounced *perfect* or *natural*, until it has been so demonstrated: or, in other words, until its five sub-genera, representing all the higher groups, have been detected. If any one of these types be missing, the genus is imperfect; and although it may still contain a sufficient number to justify us in the *belief* that it is a *natural genus*, still this fact can only be demonstrated when the circle is completed by the discovery of the missing types. Thus, for instance, the *Picidæ* is an imperfect group: since every representation of the rasorial sub-family is lost, or at least unknown. But the sub-family of *Picianæ*, or true Woodpeckers, when viewed by itself, is *perfect;* since it contains its five leading types, symbolical of all the higher groups, and these, collectively, describe a circle. The group is thus capable of being demonstrated *both perfect and natural.*—Sw.

natural must be tried, will bring to light many remarkable peculiarities which belong only to the foregoing arrangement. Yet, however confident we feel on the general accuracy of this sketch, we are unprepared either to show in what manner the sub-families are connected, or to refer many of the modern genera to their natural divisions. The Jays (*Garrulinæ*) unquestionably represent the Bush-Shrikes (*Thamnophilinæ*); while the genus *Crypsirina* and the Short-legged *Glaucopinæ* of M. Temminck form part of a group typifying the Drongo Shrikes. The slender bill of the *Fregilinæ*, at the opposite side of the circle, indicates the position of the Fissirostral group, corresponding to the *Buceridæ*. But we have many doubts on the true nature of the Tenuirostral type, since it must not only represent the Hang-nest Starlings (*Icterinæ*), but also the Caterpillar-catchers (*Ceblepyrinæ*) and the typical *Ampelidæ* or Chatterers. Now it will strike every ornithologist who has the means of examining the *Gracula calva* of authors (of which no specimen, we believe, exists in the British collections), that notwithstanding its general resemblance to the *Chauve* of Le Vaillant, (*Ois. de l'Amér.*, pl. 49,) it is decidedly a Crow; while the latter is considered by Le Vaillant as unquestionably belonging to the *Ampelidæ*. We have, therefore, good reason to suspect the *Gracula calva* to be one of the tenuirostral types of the *Corvidæ*. In all probability it will prove to be the sub-family type, representing that tribe, although at present we choose to omit its designation in the foregoing table.

On the situation of such singular or apparently isolated genera as *Picathartes*, Less., *Podoces*, Fisher, and, more particularly, *Barita*, Cuv., we cannot at present give any opinion worth recording. We suspect that *Nucifraga* is the Scansorial sub-genus of *Corvus;* and notwithstanding the confidence with which the genus *Coracias* has been referred, in the natural system, to this family, we have not the least hesitation in placing it with the *Fissirostres*. It is, indeed, almost inconceivable that the strongest prejudice in favour of any theory, professing to follow *natural* affinities, could so far have blinded the judgment of a naturalist as to make him separate *Colaris* from *Coracias*, and to violate Nature by placing these two forms (so intimately allied that we scarcely know how to distinguish them), not only in two distinct families, but actually in two widely situated tribes*. Setting aside every other consideration, and looking merely to the wide gape, which has been so much insisted upon as a peculiarity of the genus

* "Judging, however, even from external characters, *we have no hesitation* in stating our opinion that these relations" (between *Colaris* and *Coracias*) "are merely analogical."—*Linn. Trans.*, xv., p. 203.

Colaris, we find that this character is incontestably as much developed in *Coracias:* although a superficial observer, deceived by the length of the bill in the latter, will be led to think quite differently. Both genera, in fact, would be correctly described as having the *rictus wide, opening half way beneath the eye.*—Sw.

[93.] 1. CORVUS CORAX. (Linn.) *The Raven.*

GENUS, Corvus, LINN.
The Raven. PENN. *Arct. Zool.*, ii., p. 245, No. 134. WILS., ix., p. 113, pl. 65, f. 3.
Corvus corax. SAB. *Parry's First Voy., Suppl.*, cxciv. SAB. (J.) *Frankl. Journ.*, p. 671.
RICHARDS. *App. Parry's Sec. Voy.*, p. 343. BONAP. *Syn.*, No. 59.
Kaw-kaw-gew, CREE INDIANS. Toolloo-ak, ESQUIMAUX.

This well-known bird, common to the four quarters of the globe, abounds in the fur-countries and visits the remotest islands of the polar seas. It frequents the barren grounds even in the most intense winter colds, its movements being directed in a great measure by those of the herds of rein-deer, musk-oxen, and bison, which it follows, ready to assist in devouring such as are killed by beasts of prey or by accident. No sooner has a hunter slaughtered an animal, than these birds are seen coming from various quarters to feast on the offal; and considerable numbers constantly attend the fishing-stations, where they show equal boldness and rapacity. The experienced native, when he sees from afar a flock of Ravens wheeling in small circles, knows that a party of his countrymen, well provided with venison, are encamped on the spot, or that a band of wolves are preying upon the carcass of some of the larger quadrupeds; and pushes on briskly in the certain prospect of having his wants supplied. The thievish habits of a tame Raven* are well known; but it is remarkable that, inhabiting in a wild state the most secluded and worst peopled districts of America, it should exhibit the same disposition to carry off shining metallic bodies and other articles totally unfit either for food or to be used in the construction of its nest. Mr. Kendall, in crossing the height of land which divides the waters that flow towards Hudson's Bay from those which fall into the Arctic Sea, saw a Raven flying off with something in his claws, pursued by a number of his clamorous companions. The bird being fired at, dropped the object of contention, which proved to be the lock of a chest!—R.

* Ravens have been taught to articulate short sentences as distinctly as any Parrot. One belonging to Mr. Henslow, of St. Albans, speaks so distinctly that, when we first heard it, we were actually deceived in thinking it was a human voice; and there is another, at Chatham, which has made equal proficiency; for, living in the vicinity of a guard-house, it has more than once turned out the guard, who thought they were called by the sentinel on duty.—Sw.

DESCRIPTION

Of a *male*, killed at Fort Franklin, in March, 1826.

Colour black, with a greenish tint on the upper plumage, and reflecting purple and steel-blue: the ventral aspect is less glossy. *Bill* and *feet* black. *Irides* dark chestnut-brown.

Form.—Nasal feathers half the length of the bill. Tail considerably rounded, and about two inches longer than the wings. *Length*, 26 inches; *weight*, 40 ounces.

A *pied* individual was killed on the south branch of the Mackenzie, from a flock of the common sort. Its neck, fore part of the back, and part of the wings were grey; the rest of its plumage black.

[94.] 2. Corvus corone. (Linn.) *The Crow.*

Genus, Corvus, Linn.
Carrion Crow. Penn. *Arct. Zool.*, ii., p. 246, No. 135.
Crow (*Corvus corone*). Wils., iv., p. 79, pl. 35, f. 5.
Haw-haw-sew. Cree Indians.

This Crow, which resides in considerable numbers in the United States the whole year, is seen in the interior of the fur-countries in summer only, and does not go beyond the fifty-fifth parallel of latitude, nor approach within five or six hundred miles of Hudson's Bay*.

DESCRIPTION

Of a *male*, killed on the Saskatchewan plains, 21st June, 1827.

Colour black: with violet reflections from the back, neck, shoulders, flanks, breast, outer and inner wing coverts, and exterior webs of the quill feathers; tips of the quills, the throat, and belly brownish. *Bill* and *legs* shining black. *Irides* hazel or dark wood-brown.

Form.—Bristly feathers incumbent on the bill for one-third of its length. Fourth quill the longest, fifth almost equalling it. *Tail* moderately rounded, an inch and a quarter longer than the wings.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length total	19	0	Length of bill to rictus	2	1	Length of middle nail	0	7
,, of tail	7	6	,, of tarsus	2	1	,, of hind toe	0	9½
,, of wing	12	0	,, of middle toe	1	3½	,, of its nail	0	8
,, of bill above	1	10						

No difference, either in size or plumage, in the sexes.

* According to Oedman, it does not go to the northward of Nordcopin, in Sweden, lat. 58¾°.—*Penn., Arct. Zool.*, ii., p. 61, *Append.*

[95.] 3. Corvus pica. (Linn.) *The Magpie.*

Genus, Corvus, Linn.
Corvus pica. Forst. *Phil. Trans.*, lxii., p. 387, No. 11.
Magpie. Penn. *Arct. Zool.*, ii., p. 247, No. 136. Wils., iv., p. 75, pl. 35, f. 2.
Corvus Hudsonius. Sab. *Frankl. Journ.*, p. 671.
Corvus pica. Bonap. *Syn.*, p. 57, No. 62.
Shepecum-mewuck, Maskegons. Ootaw-kee-askee, Cree Indians.

This bird, so common in Europe, is equally plentiful in the interior prairie lands of America; but it is singular that, though it abounds on the shores of Sweden and other maritime parts of the Old World, it is very rare on the Atlantic coasts of America or near Hudson's Bay: only stray individuals passing to the eastward of the Mississippi or of Lake Winipeg. Mr. Say informs us that it winters on the Missouri, and takes its departure northwards on the 23rd of March. It does not entirely quit the banks of the Saskatchewan even in winter; but is much more frequent in the summer. On comparing its eggs with those of the European bird, they are found to be longer and narrower; and though the colours are the same, the blotches are larger and more diffused*. The manners of the American bird are precisely the same that we are accustomed to observe in the English one†.

DESCRIPTION

Of a specimen, killed on the Saskatchewan, 20th May, 1827.

Colour.—Scapulars, band on the rump, belly, and inner webs of the greater quills pure white, the latter partially edged with black. Rest of the plumage velvet-black, with metallic reflections on various parts, particularly the forehead and tail, of emerald and duck greens, pansy-purple, steel-blue, and gold-yellow. Bill, irides, and legs black.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	20	6	Length of bill to rictus .	1	9	Length of middle claw .	0	$6\frac{3}{4}$
,, of tail . .	12	3	,, of tarsus . .	2	0	,, of hind toe . .	0	$6\frac{1}{4}$
,, of wing . .	8	6	,, of middle toe .	1	1	,, of its claw . .	0	$6\frac{3}{4}$
,, of bill above .	1	5						

Ten specimens, of both sexes, varied only half an inch in total length, the tail being the same in all: the bills of most were somewhat shorter than the above.

	Inch.	Lin.		Inch.	Lin.
* American eggs, length . .	1	$3\frac{1}{2}$	Breadth . .	0	7
English eggs, ,, . .	1	$2\frac{7}{8}$	,, . .	0	$7\frac{3}{4}$

† We have been able to compare English and Arctic specimens with one from the interior of China, kindly communicated by Mr. Gray, and we cannot perceive the slightest difference whereon to build even the character of a variety, much less of a species. The tails of the Arctic specimens are very beautiful.—Sw.

[96.] 1. Garrulus cristatus. (Vieillot.) *The Blue Jay.*

Sub-family, Garrulinæ, Swains. *Genus*, Garrulus, Briss., Auct.
Blue Jay (*Corvus cristatus*). Penn. *Arct. Zool.*, ii., No. 138. Wils., i., p. 11, pl. 1, f. 1.
Garrulus cristatus. Vieil., *Ency. Méth.*, p. 890. *Gal. des Ois.*, pl. 102; good.
Corvus cristatus. Sab. *Frankl. Journ.*, p. 672. Bonap. *Syn.*, No. 63.
Twæ-twæ-shew. Cree Indians.

This very handsome Jay is common throughout the year in Pennsylvania, frequents the southern States only in winter, and visits the fur-countries, in summer, up to the fifty-sixth parallel, but seldom approaches the shores of Hudson's Bay. The Blue Jay exhibits in perfection most of the qualities, good or bad, for which its congeners are noted. It is equally noisy and inquisitive, alarming the inhabitants of the forest by loud screams when it apprehends danger; uttering its low, soft, and somewhat musical notes when in security; and occasionally mocking the surrounding birds with imitations of their various songs. Its eggs have a dilute oil-green colour, with scattered spots of a deeper tint, mixed with others of subdued bluish-grey: their length is $13\frac{2}{3}$ lines.

DESCRIPTION

Of a specimen, killed on the Saskatchewan plains, in May, 1827.

Colour.—Crown, crest, back, scapulars, and lesser coverts, bluish or campanula-purple. Chin, throat, and circumference of the eye tinged with pale lilac. Line on the lores, occipital collar, ears, and base of the neck, black. Quills, greater coverts, and tail rich indigo-blue, barred with velvet-black: all, except the central pair of tail feathers*, tipped with white; bars on the lateral tail feathers obsolete, the white tips more extended; inner webs of the greater quills blackish, with a white mark at the base. Belly, flanks, and thighs lavender or greyish-purple: vent and under tail coverts white. Inside of the wings and tail beneath bluish-grey. *Bill* and *legs* black. *Irides* wood-brown.—R.

Form, aberrant. *Bill* longer† and more compressed than that of the *Garrulus Canadensis*, and considerably narrower and weaker than that of the European Jay, in comparison with which the notch of the upper mandible is less distinct, the lower mandible weaker, and both much less compressed. *Wings* rounded; the fifth and sixth quills nearly equal and longest, the third shorter than the sixth: the lesser quills ovately rounded at their tips, which are not mucronated. *Tail* moderately lengthened, and all the feathers graduated.—Sw.

* There are eleven bars on the central pair of tail feathers.

† The length of the bill varies. A specimen of the *G. cristatus*, killed on Lake Huron, in perfect plumage, had a bill a quarter of an inch shorter than the one described above.—R.

DIMENSIONS.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	13	0	Length of bill above .	1	1½	Length of middle nail .	0	4½
,, of tail . .	6	0	,, of tarsus .	1	4½	,, of hind toe .	0	6
,, of wing .	5	6	,, of middle toe .	0	10½	,, of its nail .	0	6
,, of bill to rictus .	1	4½						

[97.] 2. GARRULUS STELLERI. (Vieillot.) *Steller's Jay.*

SUB-FAMILY, Garrulinæ, SWAINS. *Genus*, Garrulus, AUCT.
Steller's Crow (*Corvus Stelleri*). PENN. *Arct. Zool.*, ii., p. 249, No. 139.
Garrulus Stelleri. VIEIL. *Ency. Méth.*, p. 893.
Steller's Jay (*Garrulus Stelleri*). BONAP. *Orn.*, ii., p. 44, pl. 13, f. 1.

PLATE LIV.

This Jay is not uncommon in the summer time on the Pacific coast of America, from the mouth of the Colombia to the fifty-sixth parallel. It also frequents the Rocky Mountains, where Mr. Drummond procured a specimen. In its manners it greatly resembles the *Garrulus cristatus**.

DESCRIPTION

Of a specimen, killed near the sources of the Colombia, October, 1826.

COLOUR.—Top and sides of the head and crest velvet-black; forehead glossed with verditer-blue. Chin and throat grey. Neck above and below, breast, and scapulars pitch-black, that gradually changes, on the interscapulars, to flax-flower blue, which is the colour of the rest of the *back*, the primaries, greater wing coverts, tail coverts, and of the whole *under plumage*. Lesser quills, small coverts, and tail azure or china-blue, the upper angle of the wing marked with bluish-black, the tertiaries and tail† barred with the same. Inner webs and shafts of the quills, tips of the greater coverts, and shafts of the tail brownish. Insides of the wings blackish-grey. *Bill* and *legs* pitch-black.—R.

FORM, typical. *Bill* rather more conic than that of *G. cristatus*, and the nostril feathers much longer and denser; in every other respect the forms of the two are essentially the same.—Sw.

* This is totally distinct from the Mexican *Garrulus coronatus*, Sw., (*Syn. of Mex. Birds*, No. 67,) although the two birds have been confounded by some ornithologists.—Sw.

† There are sixteen imperfect bars on the tail.

CARRULUS STELLERI.

London Printed for John Murray, Bookseller to the Admiralty, January 1st 1829

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	14	0	Length of bill to rictus .	1	4½	Length of inner toe .	0	7¼
,, of tail . .	6	3	,, of tarsus . .	1	8	,, of hind toe . .	0	6¾
,, of wing . .	6	0	,, of middle toe .	0	11	,, of hind nail .	0	5¼
,, of bill above .	1	1	,, of its nail . .	0	4½			

[98.] **3. Garrulus Canadensis.** ***The Whiskey-Jack.***

Sub-family, Garrulinæ, Swains. *Genus*, Garrulus, Briss., Vieil. *Sub-genus*, ——?
Corvus Canadensis. Forster, *Phil. Trans.*, lxii., p. 386, No. 10.
Cinereous Crow. Penn. *Arct. Zool.*, ii., p. 248, No. 137.
Canada Jay (*Corvus Canadensis*). Wils. iii., p. 33, pl. 20, f. 1.
Garrulus fuscus. Vieil. *Ency. Méth.*, p. 892.
Corvus Canadensis. Sab. *Frankl. Journ.*, p. 672. Bonap. *Syn.*, No. 65.
Quæquæshew, Algonquins. Whiskæ-shawneesh, Crees.

Ch. Sp. Garrulus Canadensis, *super murinus; subter flavescenti-griseus, occipite et nuchâ nigris, fronte gutture lateribusque colli albis.*

Sp. Ch. Whiskey-Jack, brownish-grey above, yellowish-grey beneath; hind head and nape black; forehead, throat, and sides of the neck white.

This inelegant but familiar Jay inhabits the woody districts from latitude 65° to Canada, and in the winter time makes its appearance in the northern sections of the United States. Scarcely has the winter traveller in the fur-countries chosen a suitable place of repose in the forest, cleared away the snow, lighted his fire, and prepared his bivouac, when the Whiskey-Jack pays him a visit, and boldly descends into the circle to pick up any crumbs of frozen fish or morsels of pemmican that have escaped the mouths of the hungry and weary sledge-dogs. This confidence compensates for the want of many of those qualities which endear others of the feathered tribes to man. There is nothing pleasing in the voice, plumage, form, or attitudes of the Whiskey-Jack; but it is the only inhabitant of those silent and pathless forests which, trusting in the generosity of man, fearlessly approaches him; and its visits were, therefore, always hailed by us with satisfaction. It is a constant attendant at the fur-posts and fishing-stations, and becomes so tame in the winter as to eat from the hand; yet it is impatient of confinement, and soon pines away if deprived of liberty. It hops actively from branch to branch, but, when at rest, sits with its head retracted and the plumage of the body very loose. Its voice is plaintive and squeaking; though it occasionally makes

a low chattering, especially when agitated by the prospect of a supply of food*. It hoards berries, pieces of meat, &c., in hollow trees or between layers of the bark of decaying birches, by which it is enabled to pass the winter in comfort, and to rear its young before the snow is off the ground, and indeed earlier than any other bird in the fur-countries. Its nest is concealed with such care, that none of the Indians with whom I spoke on the subject had seen it; but both Hutchins and Hearne inform us, that "it is generally built in a fir-tree, of sticks and grass; the eggs are blue; and the young brood, which are quite black, take to flight by the middle of May."

DESCRIPTION

Of a *male*, killed on the Saskatchewan.

Colour.—Forehead, crown, cheeks, and chin, greyish-white; hind head and nape pitch-black; dorsal plumage brownish-grey; quills and tail dark lead-grey, tipped with white; the shafts dark umber. Under plumage yellowish-grey, approaching to broccoli-brown. *Bill* and *legs* black.—R.

Form aberrant. *Bill*, except in its shortness and its rather rounder ridge, greatly resembling that of the Blue Jay; the nostrils also are more thickly covered with feathers. In this, and particularly in the next species, the shafts of the lesser quills terminate in small, but very distinct points.—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	11	0	Length of bill above	0	9¾	Length of middle nail	0	4¼
,, of tail	5	9	,, of tarsus	1	4½	,, of hind toe	0	4
,, of wing	5	6	,, of middle toe	0	9	,, of its nail	0	4¾
,, of bill to rictus	0	11¾						

[99.] 4. Garrulus brachyrynchus. (Swainson.) *Short-billed Jay.*

Sub-family, Garrulinæ, Swains. *Genus*, Garrulus, Auctor. *Sub-genus*, ——?
Jeeza. Copper Indians and Dog-ribs.

Ch. Sp. Garrulus brachyrhynchus, *plumbeus: capite austeriori, frontulâ mente orbitis auricularibusque nigrescentibus.*

Sp. Ch. Short-billed Jay, bluish-grey, darker about the head; frontlet, chin, circumference of the orbits and ears blackish.

Plate lv.

Not having analysed the contents of this sub-family, we know not, with certainty, whether this Jay and the Whiskey-Jack are types of a distinct form, or merely

* The similarity between the manners of this bird and those of the *Parus atricapillus* has been pointed out by the Prince of Musignano. The resemblance extends also to their tints of colour, their attitudes, and their voices.—R.

CARRULUS BRACHYRHYNCHUS.

London Printed for John Murray Bookseller to the Admiralty January 1st 1822

aberrant examples of the typical structure. Without such information, and upon characters apparently slender, we refrain from naming a group which cannot be proved to exist in nature.—Sw.

The only specimen brought home of the Short-billed Jay was killed on the roof of the dwelling-house at Fort Franklin. Its general appearance and manners resemble those of the Canada Jay or Whiskey-Jack so strongly, that we did not recognise it as a distinct species, and consequently did not ascertain whether it completely replaces the Canadian one in high latitudes, or whether both exist in the same localities.

DESCRIPTION

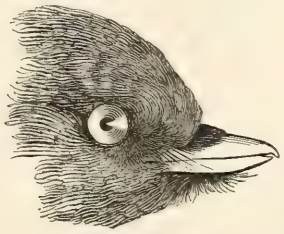
Of a *female*, killed May 26, 1826, lat. 65⅓° N.

Colour, bluish-grey, lightest on the rump and belly; deepening on the head and wing coverts to blackish-grey. Frontlet, orbits, chin, and ears blackish; breast tinged with yellowish-grey. Shafts of the quills and tail, and inner webs of the former, pitch-black; tips of the lesser quills and tail pale yellowish-grey, approaching to white. *Bill* blackish; commissure and tip pale. *Legs* blackish-brown.

Form.—*Bill* the same as that of *G. Canadensis*, except that it is a little shorter, rather broader at the base, and slightly narrower on the ridge: the rictal bristles are half its length. Plumage looser than that of *G. Canadensis*, the barbs more widely separated. *Wings* three inches shorter than the tail; greater quills* as in *C. Canadensis;* the secondaries proportionally longer, and all end in slender, but very distinct points, scarcely discernible in the Blue Jay, and not nearly so much developed in the Whiskey-Jack. *Tail* shorter than that of the latter, but equally rounded. The tarsus, which is more robust, is protected anteriorly with the same number of *scutelli* (eight) as that of *G. Canadensis*.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	10	0	Length of bill above	0	8	Length of middle toe	0	9
,, of tail	4	3	,, of bill to rictus	0	10½	,, of its nail	0	3½
,, of wing	5	2	,, of tarsus	1	6	,, of hind toe	0	5
						,, of hind nail	0	4½



* The *quills* of the specimen had recently moulted, and perhaps were not full grown.

CURTIPEDES.

Having now quitted the *two typical circles* of the insessorial or perching order, namely, the Dentirostres and the Conirostres, we proceed to the *third*, or *aberrant circle*, formed by the *Scansores*, *Tenuirostres*, and *Fissirostres* of modern authors. Notwithstanding the diversity of forms which Nature has assembled in the circle of the Curtipedes, they are all typically characterized, either by their short feet, or by a bill more or less entire. Some, indeed, have this latter member serrated; but, with only one exception (the *Melliphagidæ*), do we observe a development of that distinct indentation at the tip of the mandibles, which in the Dentirostres assumes the appearance of a tooth, and in the Conirostres that of a notch, more or less deep. We shall first notice the

SCANSORES,

or climbing birds, as being that division which touches the Conirostres by means of the *Ramphastidæ*. The families composing this group are so peculiarly distinct in their typical examples, that it would be almost impossible to mistake them. Mr. Vigors, and more particularly Mr. Mac Leay, have done much towards demonstrating the correctness of the following series, which we believe to be perfectly natural.

1. *Typical group.*

Analogies.		Families.
Conirostres.	Bill strong, lengthened, conic, entire; feet formed for ascending.	Picidæ.

2. *Sub-typical group.*

Dentirostres.	Bill short, arched, generally toothed; feet formed for clasping.	Psittacidæ.

3. *Aberrant group.*

Fissirostres. Tenuirostres. Scansores.	Bill much weaker, or very light.	Ramphastidæ. Cuculidæ. Certhiadæ.

Although we have adopted this disposition of the families, it will be perceived that we differ most essentially from Mr. Mac Leay (*Linn. Trans.*, xvi., pp. 45, 46) in our views of the true analogies they respectively bear to the leading divisions of the *Insessores*. But as this point demands a longer and more comprehensive discussion than our present rapid survey will admit of, we purpose resuming it in another place.

The manner in which the aberrant group may be closed, by the union of the *Certhiadæ* and the *Ramphastidæ*, can only be conjectured; since there is every reason to suppose that, in the latter family, some of the primary forms are either extinct or undiscovered. As most of the scansorial birds brought home by the Expeditions belong to the family of

PICIDÆ,

we must content ourselves with offering a general view of the groups which belong to it; beautifully perfect in some of its details, and remarkably deficient in others.

1. *Typical group.*

Analogies.		Sub-families.
CONIROSTRES.	Bill more or less wedge-shaped, entire; tail and feet scansorial.	PICIANÆ.

2. *Sub-typical group.*

DENTIROSTRES.	Bill strong, with the culmen arched, typically toothed; feet scansorial; tail feathers soft.	BUCCONINÆ.

3. *Aberrant group.*

SCANSORES.	Unknown.	* * * *
TENUIROSTRES.	Bill acute, entire; *Claws scansorial*, or broad,	YUNXINÆ.
FISSIROSTRES.	compressed, and hooked.	OXYRHYNCHINÆ.

It may appear, at first, somewhat absurd to suppose that the scansorial type of the *Picidæ* is unknown, seeing that the whole family is pre-eminently scansorial. But it must be remembered that in every perfect group there is one form which is terrestrial, thereby representing either the *Grallatores* or the *Rasores, and consequently* the *Tenuirostres* or the *Scansores*. After six years' reflection upon this subject, we can no longer doubt on the natural station of the genus *Buphaga**: if we therefore said that the *rasorial* type was deficient, the truth would appear more obvious, since we are as yet unacquainted with any walking bird which shows the least affinity with the tooth-billed Barbuts and the Parrots; and it is precisely at this point that the scansorial type must occur. We cannot, however, dwell upon this abstruse point, but must pass to the sub-family of the

* This is the only bird which, in our opinion, can be suspected of representing one of these tribes; indeed, no analogy can be more beautiful than that which *Buphaga* bears to the *Tenuirostres*, or suctorial tribe: the latter suck by means of the *tongue*, the former by the *bill*. We view it, however, as entering the rasorial division of the *Certhiadæ*, wherein it probably represents the *Tenuirostres*.—Sw.

PICIANÆ,

or true Woodpeckers, the only perfect assemblage of forms in the whole circle. The annexed table will explain the circular succession of the five genera:—

Analogies.		Genera.
	1. *Typical group.*	
Conirostres.	Bill perfectly wedge-shaped, angles of the upper mandible equal; posterior outer toe longest.	Picus, Linn.
	2. *Sub-typical group.*	
Dentirostres.	Bill rather depressed, angles of the upper mandible unequal; two exterior toes of equal length.	Chrysoptilus, Sw.
	3. *Aberrant group.*	
Scansores.	Bill depressed, culmen arched; anterior fore toe longer than the hinder.	Malacolophus, Sw.
Tenuirostres.	Bill compressed, destitute of lateral angles, culmen carinated.	Colaptes, Sw.
Fissirostres.	Bill rounded, obsoletely angulated, culmen convex; wings lengthened.	Melanerpes, Sw.

These groups, independent of all peculiarities relating to structure, present us with some curious facts in regard to geographic distribution. The typical genus, as is almost universally the case, is spread over all parts of the world: but as the continent of America, according to the profound observations of Baron Humboldt, is that which above all others abounds in lofty and almost interminable forests, the peculiar habitations of this family, so do we find that the *pre-eminently* typical Woodpeckers are almost exclusively found in the New World. There is not, in fact, as we shall presently show, one species in Europe, and we know but of two or three from the continent of India. The sub-typical genus is distributed precisely on the same principle: the typical species are American, and the *sub*-typical are European. *Malacolophus* is restricted to the tropical latitudes of both hemispheres; but here again do we find the same regularity of distribution. The *pre-eminent* are chiefly, if not exclusively, confined to the Brazilian forests; while all the sub-typical species we have yet seen are peculiar to the tropical parts of the Asiatic continent and its islands. *Colaptes* occurs only in the more temperate parts of America and Africa; but the types are exclusively American, while *Melanerpes* appears altogether confined to the New World.—As nearly all the species subsequently described belong to the typical group, we shall enter into some details of the Genus

PICUS.

1. *Typical group.*

Analogies.		Sub-genera.	Typical Species.
Conirostres.	Bill most perfectly wedge-shaped, the angles equal; neck lengthened, slender; tarsus manifestly shorter than the outer posterior toe; occiput with a rigid pointed crest.	*Picus*, Lin.	Picus principalis, *L.*

2. *Sub-typical group.*

Dentirostres.	Bill depressed, imperfectly wedge-shaped, lateral ridges nearest the culmen; neck less slender; outer posterior toe shorter than the anterior.	*Dryotomus*, Sw.	Picus martius, *L.*

3. *Aberrant group.*

Scansores.	Lateral ridges of the upper mandible close to the margin of the bill; tarsi of equal length with the outer posterior toe.	*Denbrobates*, Sw.	Picus affinis, *Sw.*
Tenuirostres.		*Apternus*, Sw.	Picus tridactylus, *L.*
Fissirostres.		*Dendrocopus**, Koch.	Picus pubescens, *L.*

On the two typical forms we need not dilate; but the aberrant group requires a more particular explanation. As a whole, it still retains two of the most important characters of the genus,—the perfectly acute bill and straight culmen; and secondly, the lengthened posterior outer toe. It is obvious that both these are pre-eminently typical distinctions; since the first implies a greater facility in breaking, and the latter a firmer support in climbing, than is found in any other group of the true Woodpeckers beyond the circle of this genus. But, on the other hand, we detect a considerable diminution of strength in the unequal angles of the bill, in the greater length and slenderness of the tarsus, and more particularly in the neck, which is not of that peculiar length and compactness so conspicuous in the typical structure, and which implies some particular internal arrangement of the muscles, belonging almost exclusively to such powerful birds as *P. principalis*, *robustus*, &c. We need not, therefore, look for further distinctions, to detach the typical from the aberrant forms; but as it is important that these latter should be further analyzed, we shall now give their natural characters more in detail.

* Cited by Wagler, *Sp. Avium.*

PICUS.

3. *Aberrant group.*

Analogies.		Sub-genera.
Scansores.	Tips of the lesser quills obliquely truncate, but entire; plumage olive or greenish, banded or spotted beneath; feet four-toed. Inhabits tropical climates.	*Dendrobates.*
Tenuirostres.	Plumage black and white; feet three-toed.	*Apternus.**
Fissirostres.	Tips of the lesser quills transversely truncate, and emarginate in the middle; plumage black and white, spotted above, plain beneath. Inhabits temperate climates.	*Dendrocopus.*

The *first* of these *sub-genera* is important, in so far as it opens the only true and direct passage to the Golden-shafted Woodpeckers, with olive or green plumage, typically represented by the *Picus viridis* of Europe and the *Picus Cayennensis* of Cayenne. While, therefore, we still perceive in such birds as *Picus affinis*, Sw.†, the peculiar angulated bill and the long hind toe before alluded to as prevalent in all the modifications of this genus, we yet see that these birds are clothed in a plumage coloured and marked precisely in the same manner as is that group to which they immediately lead. The *Picus fulviscapus*, Ill., assumes even the golden-coloured shafts of the typical *Chrysoptili*, although its bill and feet forbid us from placing it beyond the confines of this genus. A more refined, but a very important character, drawn from the form of the quill feathers, also belongs to this type, and at once distinguishes it from *Dendrocopus*.

The *second sub-genus* has been long since distinguished, but has, unluckily, been rendered completely artificial, by the introduction of other three-toed Woodpeckers belonging to the neighbouring genera. The disappearance of the hind toe, which so often takes place in the wading birds, leaves us in no great doubt of the analogy of this form to the *Grallatores*, and consequently to the *Tenuirostres*—the most feeble-footed birds in the whole circle of Ornithology.

The *third sub-genus* comprehends all the smaller black and white-spotted Woodpeckers of Europe and America: some few occur in the mountainous parts of India; but, with these exceptions, the group, which is very extensive, seems to belong more particularly to temperate latitudes: we have not, in fact, seen

* We have not considered it expedient to adopt the name of *Tridactylia*, given, in a modern compilation, to all the three-toed Woodpeckers indiscriminately, since it would obviously lead to much confusion. Besides, we have long had the genus *Tridactylus* in Entomology.—Sw.

† *Zool. Illustrations*, first series, ii., pl. 78.

one from tropical America, or from the south of the equator. As the genus *Melanerpes*, in point of colour, is distinguished by black and glossy plumage, intermixed with white, but destitute of bands, so do we find *Dendrocopus*, by which *Picus* is joined to *Melanerpes*, clothed in plumage precisely answering this description. Here, in fact, the passage is so incontestable, that every ornithologist must be filled with admiration when he examines the *Picus varius*, Linn., and the *Picus flavifrons*, Spix; the first betraying the evanescent characters of *Picus*, the latter the first development of those belonging to *Melanerpes*.

It thus appears that, however closely the sub-genera *Dendrobates* and *Dendrocopus* may be thought to resemble each other, yet that, as leading in the most undeniable manner to two different groups, they cannot be left undistinguished, without a total disregard of natural affinities. Their characters, although refined, are yet of easy detection; and, indeed, the very aspect of any one species would almost determine its true station: the emarginate quills of *Dendrocopus* we have hitherto found an unerring character, since they only become nearly entire in such species as tend to unite the aberrant circle: but the bill sometimes assumes the equally angulated, or rather the perfectly wedge-shaped form of the typical sub-genus *Picus*, which next succeeds. In conclusion, we need hardly premise, that the aberrant circle is perfect; since the *Picus analis* of Java shows us in what way Nature transfers the ventral bands of *Dendrobates* to the back of some species of *Dendrocopus*, which, by losing at the same time all appearance of the notch at the extremity of the lesser quills, unites the aberrant forms into one circle.

We may possibly be thought, by some, to have expressed these opinions with too much confidence. But as we have, upon every occasion, scrupulously put the naturalist in full possession of all our doubts and difficulties, even upon points which might appear trivial, so, on the other hand, do we feel no hesitation in expressing confidence upon many others; which, were it necessary, we could confirm by a mass of evidence as novel as, we venture to think, it would be unanswerable. In regard to the *Piciunæ:* when we state that our own museum contains no less than sixty-three species; that every specimen in the *Jardin des Plates*, the British Museum, and that of the Hon. East India Company, have been minutely examined, we trust that the reader will give us credit for not wishing to be carried away by theory, or to mislead naturalists by giving them the result of hasty conclusions and limited researches.—Sw.

[100.] 1. Picus (Dryotomus) pileatus. (Swains.) *Pileated Woodpecker.*

Sub-family, Picianæ, Swains. *Genus*, Picus, Linn. *Sub-genus*, Dryotomus*, Swains.
Pileated Woodpecker (*Picus pileatus*). Penn. *Arct. Zool.*, ii., p. 269, No. 157. Wils., iv., pl. 29, f. 1.
Picus pileatus. Bonap. *Syn.*, No. 38. Wagler, *Sp. Av. Picus* 2.
Mohkeechæ-cannæshees, Cree Indians. Thedê-dilleh, Chipewyans.

This great Woodpecker is resident all the year in the interior of the fur-countries, up to the sixty-second or sixty-third parallels, rarely appearing near Hudson's Bay, but frequenting the gloomiest recesses of the forests that skirt the Rocky Mountains. The stillness of these primeval shades is often invaded by the stroke of its powerful bill, which excels the woodman's axe in the loudness of its sound, and still more in the rapidity with which its blows are urged; nor does it fall far short in the quantity of chips it produces. Like other Woodpeckers, it is extremely industrious, seemingly never a moment idle, flying from tree to tree, and plying its head like a hammer the instant that it alights. A few strokes of the bill suffice to indicate the state of the tree; and if the bird judges that it would explore the interior in vain, it instantly quits it for another. According to the American naturalists, it inhabits all the United States, and is particularly numerous in the Gennessee country.—R.

DESCRIPTION

Of a *male*, killed in the winter, lat. 57°, near the Rocky Mountains.

Colour.—Top of the head, occipital crest, and maxillary stripe, bright scarlet. Line bounding the crest laterally from the eye, a band from the nostrils to the side of the nape, thence along the neck to the sides of the breast, the concealed bases of all the quill feathers, a spot covered by the spurious wing, the chin, throat, and inner wing coverts, pure white. A bar across the orbit and ears to the middle of the nape, and the rest of the plumage pitch-black, purest on the quills and tail. Some of the ventral feathers are fringed with grey, and two or three of the greater quills are tipped exteriorly with brownish-white. *Bill* blackish-grey above, pale horn-colour beneath. *Irides* golden-yellow. *Legs* bluish-black.—The *female* has a yellowish-brown forehead, with darker shafts and a blackish maxillary stripe.—R.

Form, typical of the sub-genus. *Bill*, in comparison with the typical Woodpeckers, much less robust, the culmen being very slightly arched in the middle, and the lateral angle nearer to the central ridge than to the commissure; the base is considerably wider than it is high, rendering the bill depressed for more than half its length,—a structure which sufficiently

* Δρυοτομος, *qui quercus vel arbores secat.*

shows an inferiority of strength to that possessed by the typical group. This diminution of power is extended in a particular manner to the *feet*, the anterior outer toe [*i. e.* middle toe] being longer and stronger than the posterior,—a structure the very reverse of that which characterises the typical species. *Wings* obliquely pointed, the third and seventh nearly equal, the fifth longest.—Sw.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	20	0	Length of bill to rictus .	2	6	Length of versatile toe .	0	10
,, of tail . .	7	6	,, of tarsus . .	1	3	,, of its nail . .	0	7
,, of wing . .	9	6	,, of middle toe . .	1	2	,, of hind toe . .	0	5
,, of bill above .	2	3	,, of its nail . .	0	$7\frac{3}{4}$	,, of its nail . .	0	$4\frac{1}{2}$

The northern specimens vary two inches in their total length, the bill a quarter of an inch. As the species approaches the confines of its geographic limits, its size is proportionably less. A specimen before us, from Louisiana, for which we are indebted to Mr. Audubon, measures only fifteen inches and a half in extreme length.—Sw.

[101.] 2. Picus (Dendrocopus) villosus. (Swains.) *Hairy Woodpecker.*

Genus, Picus, Linn. *Sub-genus*, Dendrocopus, Koch.
Picus villosus. Forster, *Phil. Trans.*, lxii., p. 383.
Hairy Woodpecker (*Picus villosus*). Penn. *Arct. Zool.*, ii., No. 164. Wils., i., p. 150, pl. 9, f. 3.
Picus villosus. Sab. *Frankl. Journ.*, p. 677. Wagler, *Sp. Av. Picus*, 22. Bonap. *Syn.*, No. 42.

This species exists as far north as the sixty-third parallel, and is said by Wilson to extend southwards to the Gulf of Mexico. It remains all the year in the fur-countries, and is the most common species up to the fifty-sixth degree of latitude, north of which it yields in frequency to the three-toed species.—R.

We have been much perplexed in reconciling the Arctic specimens with several others from New York and Philadelphia, in our possession. The general marking and proportions, indeed, are the same; but the latter are all much

smaller than the former. We have another, again, from Georgia, which we strongly suspect to be a distinct species, intermediate between the Pennsylvanian specimens of *villosus* and the *Picus querula* of Wilson, now before us. It is obviously a fine, full-plumaged male, perfectly resembling, in its general markings and proportions, the smaller specimens of *villosus;* but the red occipital band is so broadly and decidedly divided by deep black, that it is reduced to the appearance of two lateral transverse red spots, the space between which is full three-tenths of an inch wide: it is rather smaller than the smallest of our New York specimens of *villosus:* other more minute differences will be perceived by reference to the vignette. As yet we have seen but one specimen. Should it eventually prove a distinct species, we wish to record it by the name of our friend, M. Audubon, whose exquisite Illustrations of the Birds of his native country justly entitles him to this tribute of our admiration; and we trust our friend will be able to procure a sufficient number of specimens from his native province (Louisiana), to establish the *Picus Audubonii* as a species in his great work.—Sw.

DESCRIPTION

Of a *male*, killed, March, 1827, on the Saskatchewan.

Colour.—Eye band extending to the nape, maxillary stripe prolonged down the neck to the scapulars, and the ground of the *dorsal plumage* velvet-black, pure and shining on the head. A scarlet occipital band divided in the middle (in some specimens) by black. Supra-orbital line terminating in the crest, stripe from the nostrils half way along the neck, the chin, and *under plumage*, broad stripes on the interscapulars and on the inner webs of the scapulars, and the tips of the downy rump feathers, white. *Wings* marked with large roundish spots of the same, forming about eight rows: inner coverts spotted with black. *Tail* coverts and two middle pairs of tail feathers quite black; third pair white at the tip and half way down the outer web; next pair having a black spot at the base, and the outer pair entirely brownish-white *. *Bill* greenish-black, pale at the base beneath. *Legs* oil-green.

Form, typical. Third, fourth, fifth, and sixth quills nearly equal; the fourth or fifth the longest; second mostly shorter than the seventh.—The *female* wants the red occipital band. The white eye stripes, which in some females nearly meet on the occiput, in others are widely separated by black.—R.

Young males of the first year, in our possession, killed near New York, have the red band distinctly divided; but the pale brown tips of the intervening feathers prove this to be the effect of youth.—Sw.

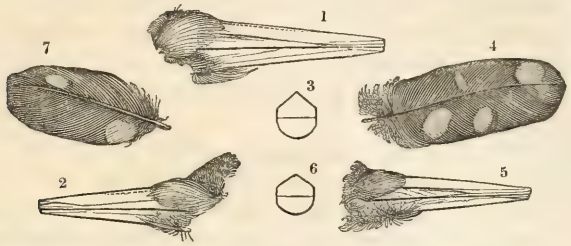
* A northern specimen has a black spot on the outer feather of one side; and in one of Mr. Swainson's New York specimens there are two distinct black spots on the inner web of each of the outer pair of tail feathers.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	11	0	Length of bill to rictus .	1	8	Length of versatile toe .	0	8
,, of tail . . .	4	3	,, of tarsus . .	0	11	,, of its nail . .	0	5
,, of wing . .	5	4½	,, of middle toe .	0	7½	,, of hind toe . .	0	3½
,, of bill above .	1	6*	,, of its nail . .	0	4¾	,, of its nail . .	0	3

The *female* is upwards of an inch shorter, and its bill measures a quarter of an inch less.



1. *Picus* (Dendrocopus) *villosus*. Bill of the male.
2. ,, ,, ,, Bill of the female.
3. ,, ,, ,, Section of the bill.
4. ,, ,, ,, Greater wing cover.
5. Var.? (*Audubonii.*) Bill.
6. ,, ,, Section.
7. ,, ,, Greater wing cover.

[102.] 3. Picus (Dendrocopus) pubescens. (Sw.) *Downy Woodpecker.*

Genus, Picus, Linn. *Sub-genus*, Dendrocopus, Koch.
Downy Woodpecker (*Picus pubescens*). Penn. *Arct. Zool.*, ii., p. 274, No. 165.
Wils., i., p. 153, pl. 9, f. 4.
Picus pubescens. Vieil. *Ois. de l'Am.*, ii., p. 65, pl. 121? Bonap. *Syn.*, No. 43.
Paupastuow. Cree Indians.

Ch. Sp. Picus (*Dendrocopus*) pubescens, *albo nigroque varius; subtus albus, pileo nigro, fasciâ occipitali rubrâ; remige septimo secundum longè superanti.*

Sp. Ch. Downy Woodpecker, varied with black and white; beneath white; crown and hind head black, the latter margined by a red band: second quill feather much shorter than the seventh.

Obs. Lateral tail feathers broad and obtuse; the shafts broad, terminating in an abrupt point, and not reaching to the apex of the extreme barbs†.

This diminutive but exceedingly industrious Woodpecker is a constant inha-

* The bill of the male bird here described is remarkably longer than any of my specimens from the United States, and would almost lead us to suspect it to be a different species.—Sw.

† We have no doubt that two, if not three species of these little Woodpeckers, from different parts of North America, have been confounded under the common name of *pubescens*. As their elucidation will be interesting, we shall shortly define the two which do not occur in the Arctic collections. We have several specimens of the two first in our museum, and they all exhibit the peculiar distinctions by which we now characterise them. When we

bitant of the fur-countries up to the fifty-eighth parallel. It seeks its food principally on the maple, elm, and ash, and, north of latitude 54°, where these trees terminate, on the aspen and birch. Its researches are made mostly, if not wholly, on live trees; and it encircles their trunks by spiral or horizontal rows of small, round holes, similar to those drilled by a gimlet, and just penetrating the bark. When engaged in this work, its attention is so much occupied, that it may be approached very closely. As soon as it does observe any one near it, it utters a shrill cry, and flies to another tree, on which it instantly resumes its labour as if the cause of its alarm were totally forgotten. It excavates its nest in the limb of a tree; and Wilson informs us that, to avoid betraying its situation, it carries the chips to a distance.

DESCRIPTION

Of a *male*, killed on the Saskatchewan in the spring of 1827.

Colour.—Top and sides of the head and the nape velvet-black; the hind head crossed by an arterial blood-red band. Ground of the dorsal plumage, wings, and two middle pairs of tail feathers, pitch-black; scapulars, upper wing coverts, and tail coverts, unspotted. Nasal feathers, a broad superciliary stripe, terminating at the red band, a line from the rictus, crossing the ears to a large round patch on the sides of the nape, middle of the back anteriorly, ends of the downy feathers on the hinder part of the back, a large central spot on a few of the intermediate wing coverts, a smaller one on the outer web of each of the greater coverts, the extreme tips of most of the quills, a series of marginal spots on both

recollect that it is only within the last few years that several of the birds of Europe have been discovered to be new and peculiar species, overlooked by former writers, and that discoveries of this kind are occurring every year, even in our own island, it need not excite any great surprise that the forests of North America are not yet exhausted.

Ch. Sp. Picus (*Dendrocopus*) medianus, *albo nigroque varius, vertice nigro occipite rubro ambobus albo maculatis; remige secundo septimum longe superanti.*

Sp. Ch. Little Midland Woodpecker, varied with black and white; crown black, hind head red, both spotted with white; second quill feather much longer than the seventh.

Obs. Lateral tail feathers narrowed and pointed at the end; the shafts narrow, gradually pointed, and reaching to the apex of the feathers.

Inhabits the middle parts of North America. Not uncommon in New Jersey. Closely resembles the *pubescens* in size and general appearance. The *female* differs merely in having the upper part of the head entirely black.

Ch. Sp. Picus (*Dendrocopus*) meridionalis, *albo nigroque varius, subtus griseus, vertice nigro, occipite latè rubro fasciato; remige secundo et octavo æqualibus.*

Sp. Ch. Little Georgian Woodpecker, varied with black and white, beneath grey, crown black, a broad red band on the hind head; second quill feather equal to the eighth.

Obs. Smaller than *P. pubescens*, which it resembles in general appearance, in the structure of the shafts, and rounded form of the tail feathers; the under plumage, however, is hair-brown (as dark, but not so yellow, as that of *Picus major*), instead of white, or whitish, as in *P. pubescens:* the red band is much broader, and the relative lengths of the quills are different.

Inhabits Georgia. As we have as yet seen but two specimens of this, we consider its specific claims require further confirmation.—Sw.

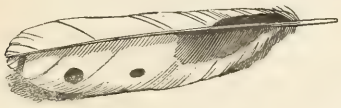
their webs, the throat, and under tail coverts, all pure white,—the shafts of the latter black near the tip. The rest of the *under plumage* pale ash-grey (in some specimens almost white). Three lateral pairs of tail feathers white; the two outer ones with two interrupted black bars near the end; inner web of the third one black to near the tip. *Bill* bluish-black. *Legs* greenish.

Form, perfectly typical. Fourth and fifth quill feathers the longest; third and sixth nearly equalling them; second just exceeding the eighth, and considerably shorter than the seventh. *Tail* graduated.—In some specimens there are a few white feathers on the frontlet. The *female* wants the scarlet band, and her bill is rather shorter.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	6	6	Length of bill to rictus	0	10¼	Length of outer hind toe	0	5¾
,, of tail	3	0	,, of tarsus	0	7	,, of outer hind nail	0	3
,, of wing	3	10½	,, of middle toe	0	5	,, of inner hind toe	0	2
,, of bill above	0	8	,, of middle nail	0	3¼	,, of its nail	0	2



Outermost tail feather but one of *Dendrocopus pubescens*.

[103.] 4. Picus (Dendrocopus) varius. (Swainson.) *Yellow-bellied Woodpecker.*

Genus, Picus, Linn. *Sub-genus*, Dendrocopus, Koch.
Le Pic varié de la Caroline. Buffon, *Pl. Enl.* 785; young.
Yellow-bellied Woodpecker. Penn. *Arct. Zool.*, ii., p. 275, No. 166. Wils., i., p. 147, pl. 9, f. 2.
Picus varius. Vieil. *Ois. de l'Am.*, ii., p. 63, pl. 118; and young, pl. 119. Sab. *Fr. Journ.*, p. 677.
Bonap. *Syn.*, No. 41: *Orn.*, i., pl. 8, f. 1 and 2. Wagler, *Sp. Av. Picus* 16.
Meekesew-paupastuow. Cree Indians.

This very gay Woodpecker is the only one that visits the fur-countries in flocks; for though the *Colaptes auratus* is also migratory, it arrives in a more straggling manner, and immediately pairs. We observed the Yellow-bellied Woodpecker, in 1825, on the north shore of Lake Huron, on the 14th of April; and, in 1827, it made its first appearance for the season, on the plains of the

Saskatchewan, on the 14th of May, in considerable flocks, enlivening by its presence the groves of aspen and taccamahac, which were previously almost untenanted. Its manners, at that period of the year, were strikingly contrasted with those of the resident Woodpeckers; for, instead of flitting in a solitary way from tree to tree, and assiduously boring for insects, it flew about in crowded flocks in a restless manner, and kept up a continual chattering*. In the breeding season it is more retired. It ranges from the sixty-first parallel of latitude to Mexico†, from whence Mr. Swainson has received specimens.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May 14, 1827.

Colour.—Forehead and crown, chin, and throat, arterial blood-red: both patches bordered by greenish-black, which spreads out on the occiput and also on the lower part of the neck and breast. Scapulars and wings black. Nostril feathers, a superciliary stripe, that expands and unites with its fellow on the nape, a band from the rictus to the shoulder, a broad oblique band from the spurious wing to the fourth greater covert, tips of most of the quills, and a series of semicircular spots on both their webs, white (except on the outer webs of the tertiaries, which are unspotted). *Back* also white, more or less tinged with yellow, crossed on the tips by oval black spots: the tail coverts want the yellow tinge, and the upper ones are blotched exteriorly with black. *Tail* feathers pitch-black; inner webs of the central pair white, spotted with black; outer pair edged exteriorly with white. *Belly* gamboge-yellow, blotched on the flanks with grey and blackish-brown. *Bill* black. *Legs* greenish.—R.

Form, aberrant, connecting the genus *Picus* with that of *Melanerpes*, Sw. *Bill* as in the typical examples of this sub-genus: the culmen sharply carinated, and the lateral angles or ridges placed very close to the exterior margin. *Wings* lengthened and obliquely pointed; the first or spurious quill remarkably small, being little more than three-quarters of an inch long; the third, fourth, and fifth quills considerably longer than the rest; the two first of these are equal, but the fifth is a little shorter; the second and sixth are nearly equal: lesser quills with notched tips. *Feet* very slender; the two exterior toes, as in *Melanerpes*, are equal, and in a slight degree shorter than the tarsus. Wings reaching nearly to the length of the tail.—Is this the first form in *Melanerpes*, or the last in *Picus?*—Sw.

The *female* wants the red on the throat.—A *yearling*, killed, in August, on the Saskatchewan, has the top of the head liver-brown, without any vestige of the red there or on the throat; neither is there any trace of the black gorget which exists on the breast of the adult. The back is blackish-brown, with roundish white spots on the tips and margins of the feathers.

* How wonderfully in these habits does Nature typify the Swallows! This, in fact, is the osculent form of *Dendrocopus*, passing into the fissirostral group of the *Picianæ*.—Sw.

† Brisson says it also inhabits Cayenne. This, however, is doubtful; since we know not of a single species of this family common to both sides of the equator.—Sw.

PICUS TRIDACTYLUS.

London Printed for John Murray Bookseller to the Admiralty, adjoining [illegible]

Under plumage yellowish-grey, obscurely barred with blackish-grey. It is nearly an inch shorter than the old bird; the members in proportion *.

DIMENSIONS
Of the mature *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	9	0	Length of bill to rictus .	1	2	Length of outer hind toe	0	7½
,, of tail . .	2	10	,, of tarsus . .	0	10	,, of its nail . .	0	4
,, of wing . .	4	9	,, of middle toe .	0	8	,, of inner hind toe	0	3½
,, of bill above .	1	0	,, of middle nail .	0	4½	,, of its nail . .	0	2

—R.

[104.] 5. PICUS (APTERNUS) TRIDACTYLUS. (Swainson.) *Common Three-toed Woodpecker.*

GENUS, Picus, LINN. *Sub-genus*, Apternus†, pl. 56, SWAINS.
Three-toed Woodpecker (*Picus Canadensis, digitis tribus*). EDWARDS, pl. 114.
Picus tridactylus. FORSTER, *Phil. Trans.*, lxii., p. 388, No. 14.
Three-toed Woodpecker. PENN. *Arct. Zool.*, ii., p. 275, No. 168.
Picus hirsutus? VIEIL. *Ois. de l'Am.*, ii., pl. 124.

CH. SP. PICUS (*Apternus*) TRIDACTYLUS, *albo nigroque varius, sincipite maculato, vertice pallidè croceo, rostro maximè depresso.*

SP. CH. COMMON THREE-TOED WOODPECKER, varied with black and white; forehead spotted; crown pale yellow; bill considerably depressed.

This bird exists in all the forests of spruce-fir lying between Lake Superior and the Arctic Sea, and it is the most common Woodpecker north of Great Slave Lake. It much resembles the *P. villosus* in its habits, except that it seeks its food principally on decaying trees of the pine tribe, in which it frequently makes holes large enough to bury itself. It does not migrate.—R.

It would be tedious, and it is perhaps unnecessary, to show in what manner all preceding ornithologists have confounded the northern three-toed Woodpeckers; since no two species can be more distinct than those here described and figured. It is more than probable that the species described by Brisson, from Cayenne, with a *red* crown, is different from either; while that of Guiana, mentioned by Bancroft as having the belly "bright crimson," is probably a fourth. The two latter, however, for the present, must be placed among the ambiguous species, since we know not to which of the genera of the *Picianæ* they truly belong.—Sw.

* The markings on the wings and tail, with the comparative lengths and proportions of the quills and tarsi, and the construction of the bill, are indubitable indications of this bird being the young of *P. varius*, though it differs very materially from the beautiful figure given by Prince Charles Bonaparte, as above quoted.—Sw.

† Th. α, *priv.*, *et* πτερνα, *calx.*

DESCRIPTION

Of a *male*, killed near the sources of the Athabasca River, lat. 57°.

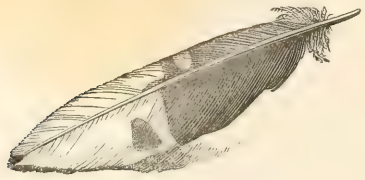
Colour.—*Nostril* feathers brown. *Crown* pale saffron-yellow, with white specks shining through; the rest of the upper surface and sides of the head velvet-black, thickly spotted with white on the forehead, round the crown, and on the sides of the throat; also a white line from the eye to the nape, where it spreads out, and another from the nostrils under the eye, dilating behind the ears. Temples and hind head unspotted. *Dorsal plumage* and wings blackish-brown; interscapulars and downy feathers on the hind part of the back barred with white; tips of most of the quills, and a series of spots* on their margins, also white, the spots deficient on the outer webs of the tertiaries and of several adjoining secondaries. Two middle pairs of tail feathers brownish-black; two exterior pairs barred with black at the base; and the intermediate pair largely tipped with white. *Under plumage*:—chin, throat, a line down the middle of the belly, and the under tail coverts, white; sides of the belly and inner wing coverts barred with black. *Bill* bluish-grey above, whitish beneath. *Legs* lead-coloured.—In some specimens there are a few white spots on the tips of the greater wing and tail coverts.—The *female* is smaller than the male, and wants the yellow of the crown, the top of the head being thickly spotted with white. The bluish and greenish-black on the temples and hind head is very glossy.—R.

Form, typical. *Bill* perfectly straight, but considerably depressed, the lateral angles so near the edge as to appear obsolete. *Tarsus* longer than the hind toe and its claw, which toe is longer than the anterior one. Lateral tail feathers pointed, and not rounded, as in *Dendrocopus pubescens*.—Sw.

Dimensions.

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	9	6	Length of bill to rictus	1	3	Length of middle nail	0	4¾
,, of tail	3	6	,, of tarsus	0	9½	,, of hind toe†	0	6
,, of wing	4	6	,, of middle toe	0	6	,, of its nail	0	4½
,, of bill above	1	1						



Outermost tail feather but one.

* Seven or eight rows on the longer primaries; in *P. arcticus* only five.—R.

† This is the versatile toe, the true hind toe being absent.—R.

PICUS ARCTICUS.

London Printed for John Murray Bookseller to the Admiralty January 1st 1823

[105.] 6. Picus (Apternus) arcticus. (Swainson.) *Arctic Three-toed Woodpecker.*

Genus, Picus, Linn. *Sub-genus*, Apternus, Swains.
Picus tridactylus. Bonap. *Orn.*, i., p. 64, pl. 14, f. 2; the male.

Ch. Sp. Picus (*Apternus*) arcticus, *super aterrimus nitidus: remigibus solis maculatis, subtus albus, axillis hypochondriisque transversè nigro fasciatis, vertice saturatè croceo.*

Sp. Ch. Arctic Three-toed Woodpecker, above glossy black, with white spots on the quills only; beneath white; sides of the body lineated with black; crown saffron-yellow.

Plate lvii.

This is in every respect a larger species than the preceding: the bill is considerably longer in proportion, and at the same time not so much depressed; the wings also are more pointed, since the sixth quill, which in the former is nearly as long as the third, fourth, and fifth, is in this fully three-tenths of an inch shorter. It was observed only on the eastern declivity of the Rocky Mountains, where the common species was also procured.—Sw.

DESCRIPTION

Of a *male*, killed near the sources of the Athabasca River, lat. 57°.

Colour.—Dorsal aspect throughout shining velvet-black, with a Prussian-blue reflexion from the head, and a greenish one from the back. *Crown* bright saffron-yellow, approaching to Dutch-orange *. Five rows of white spots on the greater quills, nearly obsolete on the posterior lesser ones: none of the quills are tipped with white. A stripe from the rictus to the side of the neck and the under plumage white, thickly barred with black on the sides of the breast and belly. *Tail* similar to that of *P. tridactylus*. Colour of the *bill* and *legs* also as in that species. The *female* wants the yellow crown, and her bill is rather shorter than that of the male.—R.

Form, typical. *Bill* less wide, and consequently stronger, than in the preceding species. The hind toe is completely versatile, since, in one of the specimens, it has been placed forward, and is so perfectly on a level with the others, that it would seem incapable of any other position. None of the quills are emarginate on their tips.—Sw.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	10	6	Length of bill to rictus	1	6	Length of middle nail	0	5¾
,, of tail	3	8	,, of tarsus	0	11	,, of hind toe	0	6½
,, of wing	5	0	,, of middle toe	0	6½	,, of its nail	0	5¾
,, of bill above	1	6						

* At the junction of the yellow tips with the black base of the crown feathers there is a white speck, but it is not nearly so large and conspicuous as in *P. tridactylus*. The specks exist in the crests of other Woodpeckers.—R.

[106.] 1. Colaptes auratus. (Swains.) *Golden-shafted Woodpecker.*

Genus, Colaptes, Swains. *Sub-genus,* (Typical form,) Swains.
Picus auratus. Forster, *Phil. Trans.*, lxii., p. 387, No. 12.
Golden-wing Woodpecker. Penn. *Arct. Zool.*, ii., p. 270, No. 158. Wils., i., p. 45, pl. 13, f. 1. Vieil. *Ois. de l'Am.*, ii., pl. 123.
Picus auratus. Sab., *Frankl. Journ.*, p. 666. Bonap. *Syn.*, No. 36. Wagl. *Picus*, No. 84.
Oothee quan-nornow. Cree Indians.

This beautifully marked bird visits the fur-countries only in the summer time, advancing as far north as Great Slave Lake, but resorting in the greatest numbers to the plains of the Saskatchewan. Instead of hiding itself in the depths of the forest, like the other Woodpeckers, it frequents the open downs, and employs itself in turning over the ant-hillocks in search of the larvæ on which it preys. Having made its repast, it often perches on the summit of a dead tree, to repose itself, its mode of life by no means requiring the continual toil which the *Pici* of the preceding pages are condemned to. It can, however, use its bill very efficiently in excavating a hole for its nest. In the pairing season the male frequently makes a loud rapping on the branch of a tree with its bill, which I have conjectured to be a signal to its mate, as I did not observe that it drilled holes at such times. Though a watchful and, in some respects, a shy bird, I have known it to construct its nest in the natural cavity of a solitary tree, standing near the door of a trading-post.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May 14, 1827.

Colour.—*Upper plumage* hair-brown: nuchal crest tipped with arterial blood-red; the fore part of the back, the scapulars, wing coverts, and lesser quills, regularly barred with black (this colour extending also to the middles of the lesser quills). *Greater quills* umber-brown, with small marginal hair-brown spots: the shafts of all the quills, the interior of the wings, and the basal half of the tail beneath, bright saffron-yellow. *Rump* pure white; its sides and the tail coverts above and below banded with black and white. *Tail* pitch-black, obsoletely tipped and spotted on the edges with brownish-white. Sides of the head, chin, and *under plumage*, fawn-coloured*, fading to greyish-white towards the vent. Maxillary band, a gorget on the breast, and round spots over the whole ventral plumage, velvet black. *Bill* bluish-black. *Irides* brown. *Legs* greyish-blue.—The *female* differs merely in wanting the maxillary band.—R.

Form, typical. *Bill* much compressed; the culmen sharply ridged, and gently curved in its whole length: there is not the least vestige of lateral ridges or angles on the upper man-

* Intermediate between *yellowish-brown* and *brownish-purple*. (Light cinnamon or fawn-colour.—Wils.)

dible. *Nostrils* large, oval, only partially protected by setaceous feathers. Head not crested; neck thick. *Wings* lengthened, obliquely pointed. Tail feathers not lanceolate, as in the other genera, but with the inner shaft broader and suddenly contracting towards the tip, so as to form a deep sinus or notch. *Feet* rather weak; the tarsus rather longer than the posterior outer toe and claw, which is shorter than the anterior. Claws slender.—Sw.

DIMENSIONS

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	13	6	Length of bill to rictus .	1	$7\frac{1}{2}$	Length of outer hind toe	0	9
,, of tail . .	7	2	,, of tarsus . .	1	$1\frac{1}{2}$	,, of its nail . .	0	$4\frac{3}{4}$
,, of wing . .	6	6	,, of middle toe .	1	0	,, of inner hind toe	0	4
,, of bill above .	1	6	,, of middle nail .	0	$5\frac{3}{4}$	,, of its nail . .	0	3

[107.] 2. COLAPTES MEXICANUS. (Swains.) *Red-shafted Woodpecker.*

GENUS, Colaptes, SWAINS. *Sub-genus*, (Typical form,) SWAINS.
Colaptes Mexicanus. SWAINS. *Syn.* (*Phil. Mag., June*, 1827), No. 84.*
Colaptes collaris. VIGORS, *Zool. Journ.*, xv., *January*, 1829, p. 354.

This species inhabits Mexico, New California, and the coast of the Pacific for some distance to the northward of the Columbia River. A specimen, killed to the westward of the Rocky Mountains, was presented by Mr. David Douglas.†

DESCRIPTION

Of a specimen, killed by Mr. Douglas on the banks of the Columbia.

COLOUR.—*Dorsal plumage* a shade darker than that of the preceding species, and, together with the white rump and tail coverts, similarly marked: quill feathers blackish-brown, edged at the tip with brownish-white, their shafts, and indeed those of almost the whole plumage, as well as the insides of the wings and under surface of the tail, reddish-orange. *Tail* above pitch-black, the exterior pair of feathers minutely tipped with white: shafts of the central pair brownish, of the others reddish-orange for two-thirds of their length. *Maxillary stripe* arterial blood-red; the rest of the *under plumage* vinaceous, with a black gorget on the breast and round spots elsewhere, as in the *C. auratus*.—FORM of the preceding species.

* It is highly probable that this is the var. A. of Dr. Latham's Gold-winged Woodpecker (*Gen. Syn.*, ii., p. 599), which, upon erroneous information, is described as having been brought from the Cape of Good Hope. Gmelin copied this account, and named the bird *Picus Cafer*; which name is transferred into the *Index Orn.* M. Wagler, without having seen the species or knowing its real *habitat*, changes the name into *Picus Lathami* (*Syst. Avium*, *Picus* 85) Previous, however, to the appearance of this latter work, we had already defined the species, and published it under the above name. Near two years after this, Mr. Vigors imagined it was new to science, and gave a very good description of it under the name of *collaris*, without apparently being aware of its previous scientific history, or of our prior denomination.—Sw.

† Only one species of this group has yet been found in Africa; it is the *Pic Laboureur* of Le Vaillant, described by Mr. Burchell, in his Travels, under the specific name of *terrestris*.—a prior designation to that of *arator*, of which M. Cuvier was not aware. Mr. Burchell very judiciously considers it the type of a sub-genus, named by him, in his MSS., *Geocolaptes*.—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	13	6	Length of bill to rictus .	1	8	Length of outer hind toe	0	10½
,, of tail . .	5	0	,, of tarsus . .	1	2	,, of its nail . .	0	5
,, of wing . .	6	2	,, of middle toe .	1	0	,, of inner hind toe .	0	4½
,, of bill above .	1	6½	,, of its nail . .	0	6½	,, of its nail . .	0	4

—R.

[108.] 1. Melanerpes erythrocephalus. (Sw.) *Red-headed Woodpecker.*

Genus, Melanerpes*, Swains. *Sub-genus*, (Typical form) Swains.
Red-headed Woodpecker. Penn. *Arct. Zool.*, ii., No. 160. Wils., i., p. 142, pl. 9, f. 1.
Picus erythrocephalus. Bonap. *Syn.*, No. 39. Wagler, *Sp. Av. Picus*, 14.

This Woodpecker, so well known in the United States for the havoc it commits in the orchards, ranges in summer from the northern shores of Lake Huron to the Gulf of Mexico. A few individuals remain in Pennsylvania all the winter. There is a specimen in the Hudson's Bay Museum, brought from the banks of the Columbia.

DESCRIPTION.

Colour.—Head and neck arterial blood-red. Fore part of the back, scapulars, and wing coverts bluish-black; greater quills, anterior border of the wing above and beneath, and the tail, pitch black: the two outer tail feathers edged on the top with brownish-white. Rump, tail coverts, lesser quills, and all the *under plumage*, with the inner wing coverts, pure white: shafts of the secondaries black. *Bill* greenish-blue, its tip blackish-grey. *Orbits* dark-brown. *Irides* yellowish-brown.—In *young birds* several of the exterior lesser quills are barred and blotched with black.—R.

Form, typical. *Bill* stout; ridge slightly arched; lateral angle of the upper mandible distant from the commissure, and reaching only half the length of the bill. Middle toe a little longer than the versatile or outer posterior one.—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	9	9	Length of bill to rictus .	1	3	Length of outer hind toe	0	8½
,, of tail . .	3	6	,, of tarsus . .	0	10½	,, of its nail . .	0	3½
,, of wing . .	5	4½	,, of middle toe .	0	9½	,, of hind toe .	0	4
,, of bill above .	1	1	,, of its nail . .	0	4	,, of its nail . .	0	2

[109.] 1. Troglodytes ædon. (Vieillot.) *House Wren.*

Family, Certhiadæ. *Sub-family*, Troglodytænæ, Swains. *Genus*, Troglodytes, Antiq.
House Wren (*Sylvia domestica*). Wils., i., p. 129, pl. 8, f. 3.
Troglodytes ædon. Vieil. *Ois. de l'Am.*, p. 52, pl. 107.
Troglodytes furvus. Bonap. *Syn.*, note 13, p. 439.

If the House Wren of Wilson, as supposed by Prince C. Bonaparte, is the

* Th. μιλας, *niger*, *et* ερπω, *repo*.

same species as the *T. ædon* of Vieillot, the figure given by the latter writer is particularly faulty. The bill is represented much too long, and the tail as perfectly even; neither is the form of the latter mentioned in M. Vieillot's description. The notice of the *Sylvia furva* by Dr. Latham is so loose, that it may be applied to several species now before us, and therefore deserves not to be retained in systems. Dr. Latham's account, in fact, is taken from Brown's figure (*Illustr. of Zool.*, pl. 38, f. 2), from which all authors who mention *T. furvus* have compiled their descriptions.—Sw.

The only specimen we have of this Wren was procured by Mr. Drummond at the foot of the Rocky Mountains. It was not seen either farther to the eastward or to the northward; but, in our hurried journeys through the country, so diminutive a bird might readily escape observation.

DESCRIPTION

Of a *male*, killed in lat. 55°, near the sources of the Elk River.

Colour.—*Upper plumage* dark hair-brown, crossed by narrow bars of umber, which are nearly obsolete on the head and neck, and most distinct on the tail and its coverts, where they are shaded off with grey: quill feathers spotted on the edges with brownish-grey. Cheeks and *under plumage* smoke-grey, slightly tinged with brown on the breast and flanks. *Bill* dark umber: the under mandible and *legs* yellowish-brown.—R.

Form nearly typical. Size of *T. palustris*, which it resembles in the comparative length of its tail, and in its general structure; the *bill*, however, is smaller and not so long, and the very faint indication of a notch in the upper mandible of *palustris* is not seen in this. The tarsi are rather longer and the hind claw is hardly more produced than in our European Wren: the length of the tail seems to render this the first species which quits the typical structure, on the advance of Nature towards the long notch-billed *Thryothori*.—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	4	6	Length of bill above	0	5¼	Length of middle toe	0	6
,, of tail	2	0	,, of bill to rictus	0	7½	,, of its nail	0	1¾
,, of wing	2	1½	,, of tarsus	0	7½	,, of hind toe	0	3¾
						,, of hind nail	0	2¼

[110.] 2. TROGLODYTES HYEMALIS. (Vieillot.) *Winter Wren.*

FAMILY, Certhiadæ. *Sub-family*, Troglodytænæ, SWAINS. *Genus*, Troglodytes, ANTIQ.
Winter Wren (*Motacilla troglodytes ?*). WILS., i., p. 139, pl. 8, f. 6.
Troglodytes hyemalis. VIEIL. *Ency. Méth.*, ii., p. 470.
Troglodytes Europæus. BONAP. *Syn.*, p. 93, No. 148.

In comparing this species with *T. Europæus*, the plumage is seen to be of a more rufous cast, particularly on the under parts, which have none of that greyish tinge observable in the European species. The black and white spots extend farther towards the breast; the latter are more defined, and the former reach to the middle of the neck: whereas, in our European Wren, the whole of the neck, breast, and anterior part of the body, are greyish-brown and immaculate. The tips of both series of the wing covers in this species are marked with a white dot, internally bordered by black; but in the European Wren the dots on the greater wing covers are scarcely seen. The bill, in this, is decidedly shorter and less curved, while the feet, although the tarsi are nearly of equal length, are manifestly larger in all their details. This difference is very observable in the claws, particularly in that of the hallux or hind toe, which is so strong as to give the idea of the American Wren being, in structure, a scansorial bird. Its migratory habits would likewise lead us to suspect that the wings would be more developed than in our species; and we consequently find they are two-tenths of an inch longer. M. Vieillot, when speaking of the *Troglodytes Europæus*, observes—"*Le Troglodyte d'hiver* des Etats Unis a de si grands rapports avec le nôtre, que nous le soupçonnons de la même espèce; mais celui de Canada, dont parle M. Charlevoix, n'est ni ce dernier ni celui d'Europe. Il en est de même des Troglodytes de Buenos Ayres et de la Louisiane."—(*Ency. Méth.*, p. 470.) This writer, nevertheless, describes the Winter Wren as distinct, apparently guided in this matter by the mere difference in its plumage. A difference, however, so slight that, had it not been strengthened by more important considerations, we should scarcely have been warranted in separating them.—Sw.

A specimen of this bird was killed on the northern shores of Lake Huron, probably on its way to its breeding-places in the mountainous districts between that lake and Hudson's Bay. It is the smallest bird hitherto discovered north of the great lakes, with the exception of the *Trochilis colubris*.

DESCRIPTION

Of a specimen killed at Penetanguishene, on Lake Huron.

Colour.—*Upper plumage* pale chestnut, darker on the head and brighter on the rump: all posterior to the neck, including the wing coverts and lesser quills, barred obscurely with hair-brown*. Two lower rows of coverts tipped with a dark bar and a spot of greyish-white. *Primaries* banded with yellowish and liver-browns: inner webs of all the quills clove-brown. *Under surface.*—Superciliary line, cheeks, throat, and breast, pale wood-brown, spotted with liver-brown; belly, flanks, and inner wing coverts, barred with the same on a greyish-white ground. Under tail coverts banded with white, liver-brown, and ferruginous. *Bill* dark umber, honey-yellow towards the base beneath.

Form typical, agreeing perfectly with the European Wren.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	4	0	Length of bill above	0	5	Length of middle toe	0	6
,, of tail	1	4	,, of bill to rictus	0	7	,, of its nail	0	$2\frac{1}{2}$
,, of wing	2	0	,, of tarsus	0	8	,, of hind toe	0	$4\frac{1}{2}$
						,, of its nail	0	4

[111.] 3. Troglodytes palustris. (Bonap.) *Marsh Wren.*

Genus, Troglodytes, Antiquorum.
Marsh Wren (*Certhia palustris*). Wils., ii., p. 58, pl. 12, f. 4.
Troglodytes palustris. Bonap. *Obs.*, No. 66; *Syn.*, No. 150.
Thryothorus arundineus. Vieil. *Ois. de l'Am.*, pl. 108 ?

The relative value of M. Vieillot's genus *Thryothorus* has not yet been determined by analysis, nor has he himself attended much to its typical distinctions. From what we have ascertained, it appears to us to be a group equivalent to that which comprehends our European Wren, from which it differs in having a longer and a decidedly toothed bill. The feet also are larger, and are much more in unison with the scansorial structure. Its geographic range appears to be restricted to America. The Great Carolina Wren of Wilson and our present bird may be considered the osculant links between these two groups, but, in their general structure, more assimilating to *Troglodytes* than to *Thryothorus*. The name of *Kampylorhynchus*, given by Spix to a Brazilian *Thryothorus*, cannot be retained, as M. Vieillot's name had been published long before.—Sw.

* The base of the plumage generally is blackish-grey; and on the rump feathers that colour is separated from the brown tips by white specks.

Mr. Drummond killed specimens of this Wren on the eastern declivity of the Rocky Mountains, in the fifty-fifth parallel. It did not come under the notice of the other branches of the Expedition.—R.

DESCRIPTION

Of a *male*, killed near the southern sources of the Elk River, lat. 55°.

Colour.—Top of the head, a triangular space between the shoulders, and the tertiaries, dark umber, the latter having pale triangular marginal spots, and the interscapulars being striped in the centres with white: rest of the dorsal plumage, the lesser wing coverts, and middle tail feathers yellowish-brown*, with ten or twelve obscure bars on the latter: lateral tail feathers blackish-brown, edged all round, and irregularly barred with yellowish-brown. Lores, line from the eye to the sides of the nape, and the *under plumage*, whitish, the flanks, vent, and thighs tinged with brown. *Bill* above dark umber; under mandible and *legs* yellowish-brown.—R.

Form aberrant from the typical short-tailed Wrens,—since the tail and bill are more lengthened; but the latter may be described as entire, as the notch is so slight as to be of no use to the bird, and can hardly be perceived through a lens. The *feet* are larger in all respects than those of *T. ædon*, and the hind claw is considerably more lengthened and slender, even than that of the Great Carolina Wren, which, although thicker and more curved, is shorter. The aquatic habits of this species fully explains the reason of its peculiar organization. The *tails* of all these Wrens are rounded.—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	5	0	Length of bill above . .	0	7	Length of middle toe .	0	6½
,, of tail . . .	1	10	,, of bill to rictus .	0	8	,, of its nail . .	0	2¼
,, of wing . . .	2	1	,, of tarsus . . .	0	9	,, of hind toe . . .	0	3½
						,, of its nail . .	0	3½

* The white specks which separate the colours of the base and tip of the rump feathers in *T. ædon* and *hyemalis* do not exist in this species.

TENUIROSTRES.

When alluding to this magnificent tribe, in a former part of our work, we forgot that two charming little Humming-birds entered the geographic range prescribed to our Northern Zoology, and would therefore require a detailed notice. We shall thus be enabled to complete our sketch of the entire order of Insessores and of the natural families composing it, by giving the following table as the result of our researches in this tribe.

Analogies.		Families.
	1. *Typical group.*	
Conirostres.	Bill very soft, the margins entire and membranaceous.	Trochilidæ.
	2. *Sub-typical group.*	
Dentirostres.	Bill soft, obsoletely notched, the margins minutely denticulated, the tip very acute.	Cinnyridæ.
	3. *Aberrant group.*	
Scansores. Tenuirostres. Fissirostres.	Bill hard, the tip not flexible or acutely pointed, the under mandible exposed.	Meliphagidæ. Paradisidæ. Promeropidæ.

Upon the first column of analogies, which well deserves the attention of ornithologists, we cannot at present dwell. But some highly interesting results, which have very recently attended our investigation of the theory of analogies, induces us to offer the above series to the notice of zoologists with some degree of confidence.

The respective circles of the typical and sub-typical groups are complete, only one genus among the *Cinnyridæ* remaining to be characterized*. In regard to the aberrant group, it is obvious that a form which presents us with the bill of a *Promerops* and the feet of a Honey-sucker, would be sufficient to render the circle not very incomplete. Such a form we actually see in the magnificent *Ptiloris paradiseus*, Swains., the Rifle-bird of the Australian colonists; some ornithologists still persist in placing it with the *Promeropidæ*, while others consider it as belonging to the *Meliphagidæ*. Can we have a better proof of its affinity to both these families?

The genus *Nectarinia*, into which the sub-genus *Dacnis* of M. Cuvier merges, is the fissirostral type of the *Cinnyridæ*, and conducts us at once into the circle of the

* *Anthreptes*, Nobis.—See *Appendix*.

TROCHILIDÆ,

or genuine Humming-birds of the New Continent. The leading divisions of this superb family we took occasion to characterize, some years ago, in another work. A better acquaintance with the theory of variation, of which at that period, indeed, we were totally ignorant, has taken from us all confidence in the accuracy of the minor types which we then ventured to name; we still, however, believe that the primary groups succeed each other in the following series:—

		Genera.
1. *Typical group.*	Bill narrow and very straight in its entire length; tail moderate, forked.	*Trochilus*, Linn.
2. *Sub-typical group.*	Bill slightly curved; tail lengthened, much longer than the wings, and deeply forked.	*Cynanthus*, Sw.
3. *Aberrant group.*	Bill falcated; tail lengthened, cuneated.	*Phaëthornis*, Sw.
	Bill considerably depressed, and enlarged at the base; nostrils tumid.	*Campylopterus*, Sw.
	Bill curved, culmen convex; tail very broad, the feathers abruptly truncated.	*Lampornis*, Sw.

The only doubt we are inclined to throw upon this table (which is merely an exposition of the typical distinctions of the five genera) relates to *Campylopterus*, a name we originally confined to the broad-shafted Humming-birds. We suspect, however, that the typical form is represented by the *Trochilus cyaneus* and such other species as have a very depressed bill, considerably dilated at its base, where it is generally red: in this division the tail is particularly variable. Unluckily, from having broken up our own collection of *Trochilidæ*, we cannot, at this moment, investigate the subject more closely. But the truth is, that the accuracy of the above table can only be demonstrated when the circular series of each genus has been made out*. Until this is done, we shall merely intimate our belief that both the species now to be described belong to the typical genus, and that the second is decidedly an aberrant form, representing the scansorial Creepers (*Certhiadæ*).—Sw.

* However deficient we are in this country in materials for such inquiries, the British ornithologist who desires to become acquainted with this family has no need of visiting foreign museums. In the unrivalled collection of our valued friend, George Loddiges, Esq., he will see an assemblage of these gems; which, in point of number, perfection, and splendour, cannot be equalled, much less surpassed, by those of *any* museum, public or private, in the world. We have long meditated, with the valuable assistance of our enthusiastic friend, a complete revision of this family, and we trust that this intention will not be long delayed.—Sw.

[112.] 1. Trochilus colubris. (Linn.) *Northern Humming-bird.*

Genus, Trochilus, Linn.
Trochilus colubris. Idem.
Red-throated Humming-bird. Edwards, i., pl. 38. Penn. *Arct. Zool.*, ii., 176.
Red-throated Humming-bird. Lath. *Syn.*, ii., p. 769. Idem, *Gen. Hist.*, iv., p. 344 (omitting varieties).
Trochilus colubris. Idem. *Ind.*, i., p. 312.
Le Rubis. Vieil. *Ois. de l'Am.*, i., pl. 31 and 32.
Humming-bird (*Trochilus colubris*). Wils., ii., p. 26, pl. 10, f. 3 and 4.
Trochilus colubris. Bonap. *Syn.*, No. 155.

The migration of birds has in all ages been a matter of pleasing speculation to the natural philosopher; but in no instance does it appear more wonderful than when we contemplate it as forming part of the economy of the Humming-birds. The vast extent of space traversed by some of the winged tribes in their way from their winter retreats to their breeding-places gives us great ideas of their unwearied strength of wing and rapidity of flight; but how is our admiration of the ways of Providence increased, when we find that one of the least of its class, clothed in the most delicate and brilliant plumage, and apparently more fitted to flutter about in a conservatory than to brave the fury of the blast, should yield to few birds in the extent of its migrations! The Northern Humming-bird, which winters to the southward of the United States, ranges, in summer, to the fifty-seventh parallel, and perhaps even still farther north*. We obtained specimens on the plains of the Saskatchewan, and Mr. Drummond found one of its nests near the sources of the Elk River. This nest is composed principally of the down of an anemone, bound together with a few stalks of moss and bits of lichen, and has an internal diameter of one inch. The eggs, two in number, of a reddish-white colour and obtuse at both ends, are half an inch long and four lines and a quarter in transverse diameter.—R.

DESCRIPTION

Of a *male*, killed on the plains of the Saskatchewan.

Colour.—The whole of the *upper plumage* shining gilded green. *Wings* dusky black, glossed with violet: lateral tail feathers the same, but considerably darker and glossed more with purple, particularly beneath; the two middle feathers entirely green, the next pair edged with green. *Under plumage:* a black fillet passes from ear to ear and forms a line under the

* Kotzebue informs us that the *Trochilus rufus* is found in summer as high as the sixty-first parallel on the Pacific coast. The climate of the Pacific coast is considerably milder, however, than that of the country lying to the eastward of the Rocky Mountains.—R.

chin; the upper half of the throat is covered by scale-like feathers of a brilliant and changeable ruby-red colour, the feathers round which, towards the breast and on the sides of the neck, are white, which becomes more obscure on the body, vent, and under tail covers: the sides are dusky, but glossed with green.

Form.—*Bill* perfectly straight in its entire length. *Wings* short; the quills narrow, and not reaching to the end of the tail; the fifth, sixth, seventh, and eighth quills are very deeply and obliquely notched at the tip of their outer webs, in such a marked and peculiar manner, as to give an idea that the notch was artificial. The *tail* is rather short, but distinctly forked; the two outer feathers are nearly equal, the rest gradually diminish: they have an obtusely pointed form, being narrowed towards their ends; but those in the middle are broader.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	3	6	Length of bill above	0	7¼	Length of middle toe	0	2
,, of tail	1	1	,, of bill to rictus	0	9¼	,, of its nail	0	1½
,, of wing	1	7	,, of tarsus	0	1¾	Depth of fork of tail	0	4

—Sw.

[113.] 2. Trochilus (Selasphorus) rufus. (Swainson.) *Cinnamon, or Nootka Humming-bird.*

Genus, Trochilus, Linn. Swains. *Sub-genus*, Selasphorus*, Swains.
Ruff-necked Humming-bird. Lath. *Syn.*, ii., p. 785, pl. 35. *Gen. Hist.*, iv., p. 350.
Trochilus rufus. Gmel. *Syst.*, i., p. 497.
Trochilus collaris. Lath. *Ind. Orn.*, i., p. 318.
Ruff-necked Honey-sucker. Penn. *Arct. Zool.*, ii., p. 177.
Le Sasin. Vieil. *Ois. dor.*, pl. 61, 62.
Humming-bird. Cook's *Third Voyage*, ii., 297.

The discovery of this superb species, in the cold and inhospitable regions of Nootka Sound, is due to our great navigator, Captain Cook; while to Dr. Latham belongs the honour of first making it known to science. By a singular chance, we have at this moment before us one of the identical specimens, in perfect preservation, collected by the naturalists of that expedition: it was presented by the late Sir Joseph Banks to Mr. Bullock, and was purchased by us, at a very high price, at the dispersion of that collector's museum by public auction. We are likewise able to vouch for its geographic range, to the south-

* Th. Σελασφορος, *splendorem ferens.*

ward, as far as the table-land of Mexico, near Real del Monte; specimens from that part having been obligingly sent us for examination by our friend, Mr. Taylor, and which are now in the magnificent collection of Mr. Loddiges.—Sw.

DESCRIPTION

Of a full-plumaged *male*, in Mr. Swainson's museum.

Colour.—General tint of the upper plumage, rufous or cinnamon*, which covers the head, ears, neck, back, rump, upper tail covers, and margins of the tail feathers; the crown and the wing covers, however, have a strong coppery-greenish gloss; but which does not extend to the ears, the upper line above the eye, or to that between the eye and bill; the greater and lesser quills, and the middle of the tail feathers with their tips, are all of a pale dusky brown, slightly glossed with violet. *Under plumage:* the whole of the chin and throat is covered by scale-like feathers, of a fire-like colour and lustre, equally brilliant with the throat of *T. moschitus*, but with more of a red and less of an orange gloss; the tints, however, change in almost every direction of light, and in all are exquisitely splendid. The middle of the breast and vent are nearly pure white; but all the sides and the under tail covers are of the same colour as the back. *Legs* and *feet* dark-brown.—The *female*, as described by Dr. Latham, chiefly differs in being green-gold, where the male is cinnamon; the throat being merely spotted with the glowing ruby colour of the male.

Form.—*Bill* remarkably straight for its entire length, and gibbous both above and beneath towards the tip. The *wings*, in comparison with those of many other forms in this family, are short and resemble those of *T. colubris:* the primaries are narrow and pointed, and the first is shorter than the second. The *tail*, although short, is more cuneated than rounded, the two middle pairs being longest: all are narrowed and obtusely pointed at their extremities, but the two outer pairs are particularly narrow. The *feathers* on the sides of the throat are gradually elongated, as they recede from the ears and seem capable of being raised into two tufts.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	2	10	Length of tail from vent .	1	0	Length of bill above . .	0	$7\frac{1}{2}$
,, of wing . . .	1	7	,, of tail beyond wings	0	$3\frac{3}{4}$	,, of bill to rictus .	0	$8\frac{3}{4}$

—Sw.

* Dull reddish-orange.—Syme.

FISSIROSTRES.

The last division of the *short-footed perching birds*, which we have now arrived at, comprises many groups, presenting among themselves a great diversity of structure, but all conspicuous for the weakness of their feet. In this respect they resemble the Tenuirostres. There is, however, a remarkable difference in the organization of the two groups, which is accompanied by habits no less dissimilar. In the last assemblage of birds, the typical distinction rests upon the nourishment being taken, or captured, by the *tongue;* whereas among the Fissirostres this office is performed only by the *bill*. The whole of these birds, in short, however different they may appear to a superficial observer, agree in having a very wide *rictus* or gape, always broad at its base; their food, also, is no longer vegetable, but is derived entirely from the insect world, and is caught during flight in the manner of Swallows,—that family, in short, which stands pre-eminently typical of the whole. The distinguishing characters of all these groups may be thus stated:—

Analogies.		Families.
	1. *Typical group.*	
Conirostres.	Bill short, triangular; rictus smooth; feet perfect; plumage compact.	Hirundinidæ.
	2. *Sub-typical group.*	
Dentirostres.	Bill short, triangular; rictus bristled; feet imperfect; plumage lax.	Caprimulgidæ.
	3. *Aberrant group.*	
Scansores. Tenuirostres. Fissirostres.	Bill stronger and longer; feet short, imperfect, and of different constructions.	Trogonidæ. Halcyonidæ. Meropidæ.

So little has been published on the natural economy of the Trogons, that hitherto our systematists have been left completely in the dark as to their probable station in nature. On this point we hope to communicate some interesting facts, the result of personal observations on these birds in tropical America, in another place. For the present, we shall merely premise that, as fissirostral birds, they *seize their food during flight;* that, as connected to the crepuscular Goat-suckers, they feed chiefly during the evening; that, as united to *Nyctyornis*, Sw., and *Prionites*, Ill., the bill is either smooth or serrated; that, as allied to the

scansorial *Ramphastidæ*, the Trogons, like the Toucans, are *omnivorous*. Finally, who that has seen the superb *Trogon Pavoninus* of MM. Spix and Temminck, with its long, gilded, green feathers, is not immediately reminded of a Peacock? This analogy, in short, has given rise to its specific name, and has been at once perceived, without the least suspicion that the Trogons actually represented the Gallinaceous order.

It now only remains to show in what manner the *Curtipedes* are united into a circle, by the union of the *Fissirostres* and *Scansores*. We have already intimated that the Trogons typify the only fissirostral group which is omnivorous; so also are the Toucans and the Motmots (*Prionites*): the affinity between the two latter every writer since the days of Linnæus has perceived; but the bill of the Motmots is *compressed*, while that of nearly all fissirostral birds, as suited to their peculiar habit of catching their food in the air, is considerably *depressed*. To prove, therefore, the connexion of *Prionites* with the *Fissirostres*, it was necessary that a form should be discovered which resembled *Prionites*, but had the broad bill of a fissirostral bird; or, in other words, provided with such a flattened bill as is seen in *Galbula grandis*. Now it fortunately happens that, although we have not yet seen it, Mr. Vigors (who places the Motmots as one of the groups of the Hornbills) has actually proved the existence of the very bird we have theoretically described, without having the slightest suspicion of the station it occupies in the chain of Nature. The very name of *Platyrhynchus*, which that gentleman has judiciously bestowed upon this most extraordinary bird, is sufficient to show how widely it differs from all its congeners in the shape, and *consequently the functions* of the bill. We would ask, therefore, as *Prionites* is connected with *Ramphastos* on one side, into what genus does it merge upon the other? Whatever that genus may be, it must have short, weak feet; the bill may be either serrated or entire, but it must be decidedly depressed, since that is the form which Nature plainly shows she is about to assume in her new group. We should also expect to see, in this succeeding link, a continuation of the same shortness of wing and length of tail, which is so conspicuous in *Prionites*. Now the only bird yet discovered, in the whole circle of Ornithology, which realizes this imaginary description, is the *Galbula grandis* of Demerara. Unlike all its congeners, it has a broad, *depressed* bill, but with the margins entire; it is equal in size to most of the Motmots; its feet, like theirs, are weak; it has the same kind of short, rounded wings and lengthened tail; and is, moreover, clothed in nearly the

very same colours as the *Prionites Martii* of Spix! Without entering further, therefore, into this question, we cannot but consider the union of the *Fissirostres* and the *Scansores* as completely established.

But in what manner, it will be asked, do the aberrant families of the *Fissirostres* describe their own circle? By the publication of the genus *Nyctyornis**, we have already enabled ornithologists to answer this question. *Nyctyornis* has the compressed, curved bill of a Bee-eater, engrafted, as it were, upon the body of a Motmot. M. Temminck refers it unhesitatingly to the genus *Merops;* while, if the bill is concealed, it is utterly impossible to distinguish the bird from a *Prionites.*

We must here close our introductory observations on the leading groups of the INSESSORES; were we to continue them to the remaining orders, our limits, restricted to but one volume, would be extended to several. Our remarks upon many of the families have been, from necessity brief; and they may possibly be thought very imperfect. Of this imperfection no one is more sensible than we are ourselves; yet when the vastness of the subject is considered, and when it is remembered that what we have written is the result of pure analysis only, we trust that those who are best able to judge our labours will, at all events, appreciate our desire of discovering TRUTH.—SW.

[114.] 1. HIRUNDO BICOLOR. (Vieillot.) *Green-blue Swallow.*

SUB-FAMILY, Hirundinæ, SWAINS. *Genus,* Hirundo, LINN.
Hirundo bicolor. VIEIL. *Ois. de l'Am.*, pl. 31; pessimè.
Green-blue or White-bellied Swallow (*H. viridis*). WILS., v., p. 44, pl. 38, f. 3; optimé.
Hirundo viridis. SAB. *Frankl. Journ.*, p. 679. AUDUB. *Ann. Lyc. New York*, i., p. 166.
Hirundo bicolor. BONAP. *Syn.*, No. 74.

This neat and handsome Swallow frequents the woody districts up to the sixtieth parallel, making its nest in hollow trees, of dry grass and feathers. Its migrations, by the researches of the indefatigable M. Audubon, have been traced throughout the year. He saw it, in numbers, every day during the whole winter in the neighbourhood of New Orleans. "The flocks," says he, "were larger the stronger the breeze blew from the sea. Many retired, in the evenings, to

* *Zoological Illustrations*, new series, vol. i., pl. 56.

holes about the houses; but the greater numbers resorted to the lakes, and spent the night among the branches of the candle-berry myrtle. Their twittering and the motion of their wings is heard during the whole night. As soon as day begins to dawn, they take wing, flying low over the lakes for some time; then, rising, they gradually move off in search of food, separating in different directions." In its mode of flight and general appearance it strongly resembles the *H. urbica* of Europe, of which, from imperfect comparisons, it was long considered to be a variety. It is, however, as far as we know, peculiar to the New World. It is said that it often takes possession of the boxes which the farmers of the United States set up for the Purple Martin, and constructs its nest within, of hay, without using either mud or clay.—R.

DESCRIPTION

Of a full-plumaged *male*, in Mr. Swainson's museum, killed at New York.

Colour.—*Upper plumage* blue-black, richly glossed with very dark sea-green, the blue tint predominating in some lights and the green in others. *Wings* and *tail* blackish-brown, the tertials, spurious quills, and greater covers having a slight marginal gloss of blue-green. The whole *under plumage*, from the chin downwards, is pure white. *Ears* blue-green. *Bill* black. *Feet* brown.

Form typical: the wings are four-tenths of an inch longer than the tail; the first quill is the longest, and the lesser ones are deeply emarginate.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	5	10	Length of wing . .	4	8⅔	Length of bill to rictus .	0	6
,, of tail from vent .	2	6	,, of bill above .	0	2⅔	Depth of fork of tail .	0	5

—Sw.

[115.] 2. Hirundo Americana. (Wilson.) *American or Barn Swallow.*

Genus, Hirundo, Linn.
Chimney Swallow. Penn. *Arct. Zool.*, ii., p. 429, No. 330.
Barn Swallow (*H. Americana*). Wils., v., p. 34, pl. 38, f. 1 and 2.*
Hirundo rufa. Vieil. *Ois. de l'Am.*, pl. 30. Bonap. *Syn.*, No. 72.

This Swallow is very common in the United States, and builds its nests in every barn to which it can find access. In the fur-countries, where the habitations

* It appears to us very doubtful whether the *Hirondelle à ventre roux de Cayenne* of Buffon (*Ed. Sonn.*, xix., p. 35), of which methodists have made their *Hirundo rufa*, is really the same as the *H. Americana* of Wilson. From the evidence we at present have, we are disposed to consider them distinct. The only authentic account of the Cayenne species is that given by Buffon, which all the compilers have since copied. From this it appears to be only *five inches*

of man are few and far between, it inhabits caves, particularly in the limestone rocks; and it also frequents the outhouses at the trading-posts. When Fort Franklin was erected, on the shores of Great Bear Lake, in the autumn of 1825, we found many of its nests in the ruins of a house that had been abandoned for more than ten years. Towards the end of the following May, the birds themselves made their appearance, and immediately commenced a survey of the different buildings; but the storehouses having been repaired, without any reference to the poor Swallows, they found no entrance; and after lingering about their old haunts for a week, they flew off in search of other quarters. At Fort Chepewyan, lat. 57°, the Barn Swallows have regularly, about the 15th of May, for a number of years, taken possession of their nests of mud and straw, constructed within an outhouse, and we observed numbers of them in the same month at Fort Good Hope (in lat. 67½°), the most northerly post in America. The eggs are marked with spots and minute streaks of yellowish-brown on a white ground. After rearing a single brood, they quit these high latitudes early in August, the supply of food then becoming precarious; and about the middle of that month they begin to prepare for their departure, even from Pennsylvania, though they do not entirely disappear till the middle of September. Their arrival in Pennsylvania being nearly two months earlier than within the Arctic circle, they are enabled to rear two broods.

DESCRIPTION

Of a *male*, killed at Fort Chepewyan in June, 1827.

Colour.—Forehead, throat, and upper part of the breast pale chestnut; rest of the *under plumage* yellowish-brown. Top of the head and neck, *dorsal plumage*, lesser coverts, and sides of the breast, deeply glossed with violet-purple; the base of the plumage of these parts being grey, the middle greyish-white, and pitch-black next the purple tips. Quills, greater coverts, and tail blackish-brown, with dark green reflexions: all the tail feathers but the central pair having a large white spot on the middle of their inner webs. *Bill* black. *Irides* dark brown. *Legs* blackish-purple.

Form typical. *Bill* rather weaker and more depressed than that of *H. lunifrons*. *Tail* deeply forked; the lateral pair of feathers prolonged.

and a half long (French measure?); ours is fully seven: the front is whitish (*le front blanchâtre*); ours is very deep rufous. But the most remarkable difference between the two birds is in the construction of their nests: the Cayenne bird building one *without* mud, and so long as sometimes to measure a foot and a half, with an opening *near the bottom*—the *Americana* of Wilson, on the contrary, using a good deal of mud; the length is only seven inches, and the opening *at top*, with an external rim, for the parents occasionally to sit upon. (See Wilson, v., p. 40, and Sonnini's Buffon, xix, p. 35.) Until this matter is further investigated, we cannot suppose that individuals of the *same species* would, in different countries, build their nests in such very dissimilar ways.—Sw.

The *female* has the under plumage paler, the purple of the back less vivid, and the exterior tail feathers a quarter of an inch shorter.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	7	3	Length of bill above .	0	3	Length of middle nail	0	2½
,, of tail . .	3	6	,, of bill to rictus .	0	7½	,, of hind toe .	0	3
,, of tail in middle	2	0	,, of tarsus . .	0	6	,, of its nail .	0	2½
,, of wing . .	4	8	,, of middle toe .	0	5			

—R.

[116.] 3. Hirundo lunifrons. (Say.) *White-fronted or Cliff Swallow.*

Genus, Hirundo, Linn.
Cliff Swallow (*Hirundo lunifrons*). Say, *Long's Exp.*, ii., pp. 235, 349 (Am. Ed., p. 47).
Hirundo fulva. Bonap. *Syn.*, No. 73; *Orn.*, i., p. 63, pl. 7, f. 1?*

This species was discovered in 1820, by Major Long, near the Rocky Mountains, where it abounds. In the same year it was seen in great numbers by Sir John Franklin's party, on the journey from Cumberland House to Fort Enterprise, and on the banks of Point Lake, in latitude 65°, where its earliest arrival was noted, in the following year, to be the 12th of June. Its clustered nests are of frequent occurrence on the faces of the rocky cliffs of the Barren Grounds, and they are not uncommon throughout the whole course of the Slave and Mackenzie Rivers. On the 25th of June, in the year 1825, a number of them made their first appearance at Fort Chepewyan, and built their nests under the eaves of the dwelling-house, which are about six feet above a balcony, that extends the whole length of the building, and is a frequented promenade. They had thus to graze the heads of the passengers on entering their nests, and were moreover exposed to the curiosity and depredations of the children, to whom they were novelties; yet they preferred the dwelling-house to the more lofty eaves of the storehouses, and in the following season returned with augmented numbers to the same spot. Fort Chepewyan has existed for many years, and trading-posts, though far distant from each other, have been established in the fur-countries for a century and a half; yet this, as far as I could learn, is the first instance of this species of Swallow placing itself under the protection of man within the widely extended

* We consider the *Hirundo fulva* of M. Vieillot (*Ois. de l'Am.*, pl. 32) as distinct from the *lunifrons* of M. Say. In the first the front is invariably snow-white, while the latter is described as having this part reddish-brown (*brun rougeâtre*), and the breast yellowish; in *both*, however, the tail is slightly forked. A third species, our *H. melanogaster* (*Syn. of Mex. Birds*, No. 5), differs from both, in having the front, *and also the throat*, deep and bright rufous.—Sw.

lands north of the great lakes*. What cause could have thus suddenly called into action that confidence in the human race with which the Framer of the Universe has endowed this species, in common with others of the Swallow tribe? It has been supposed that birds frequenting desert countries, and unaccustomed to annoyance from man, would approach him fearlessly, or at least be less shy than those inhabiting thickly-peopled districts, where they are daily exposed to the attacks of the great destroyer of their tribes. But although this may be true of some families of birds, it is far from being generally the case. On the contrary, the small birds of the fur-countries, which are never objects of pursuit, and scarcely even of notice to the Indian hunter, are shy, retiring, and distrustful, their habits contrasting strongly with the boldness and familiarity of the Sparrows, that are persecuted to death by every idle boy in Europe. Nay, some species, which are bold enough during their winter residence in the United States, evince great timidity in the northern regions, where the raising their progeny occupies their whole time. In like manner, the Redbreast of Europe, familiar as it is in winter, sequesters itself with the greatest care in the breeding season. The question, however, recurs,—what is the peculiarity of economy which leads one species of bird to conceal its nest with the most extraordinary care and address, and another to place its offspring in the most exposed situation it can select?

At Fort Chepewyan the young came abroad on the 14th of July, and at the end of the month the whole took their departure. The nest is hemispherical, composed externally of small pellets of tempered mud, and lined with soft hay and a few feathers. When attached to cliffs, the nests are clustered together, and each has an irregular tubular entrance at the top, an inch or two long, aptly compared, by Mr. James, to the broken neck of a retort. Under the eaves of a house, the nests are in a single line, not clustered; their form is adapted to the situation, and the tubular entrance is either entirely wanting or reduced to a mere ledge. The nests are easily destroyed by rain; and as they generally face the south-west, a gale from that quarter, which is of comparatively rare occurrence in the month of July in the fur-countries, destroys great numbers of them. The labour of building is performed chiefly in the morning, and three or four days suffice to complete the shell of the dwelling. The eggs, usually four, are oblong, of a white colour, with

* The late Governor De Witt Clinton, has given a very interesting history of the closely resembling species *H. fulva*, which about sixteen years ago began to build its nests on the walls of houses in the Western States, and has, every succeeding summer, been advancing farther to the eastward.—*Vide Ann. Lyc. New York*, i., P. 156.

dusky spots. The note of this species is a gentle twittering, like that of the *H. urbica* of Europe, which it strongly resembles in its mode of building. When the bird is angry or alarmed, it utters a feeble, but harsh and acute scream. It preys on mosquitoes and other small winged insects.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, June 26, 1827.

Colour.—Region of the bill, lores, and orbits, black. Top of the head, back, and scapulars also black, glossed with violet-purple. Chin, throat, and sides of the head and nape, bright brownish-red: nuchal collar greyish-brown. Rump and vent wood-brown. *Wings* and *tail* blackish-brown, with a greenish gloss, the lesser quills edged on the tips with grey; tail coverts above and below clove-brown, fringed with brownish-white. *Crescentic frontal band* and belly white. Breast and flanks brownish-grey.—*Female* like the male.

Form typical. *Wings* a little longer than the slightly forked tail*. The first quill is the longest, the lesser ones, as usual, are deeply emarginated.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	6	3	Length of bill above	0	4	Length of middle nail	0	2
,, of tail	2	3	,, of tarsus	0	6	,, of hind toe	0	2½
,, of wing	4	6	,, of middle toe	0	5½	,, of its nail	0	2¼
,, of bill to rictus	0	6¾						

—R.

[117.] 4. Hirundo riparia. (Linn.) *The Sand Martin.*

Genus, Hirundo, Linn.
Sand Swallow. Penn. *Arct. Zool.*, ii., p. 430, No. 332.
Bank Swallow or Sand Martin (*H. riparia*). Wils., v., p. 46, pl. 38, f. 4.
Hirundo riparia. Bonap. *Syn.*, No. 75.
Shee-shee-winèe-pæshoo. Cree Indians.

This species, which is considered to be identical with the European Sand Martin, is an inhabitant of the four quarters of the world. It is remarkable for the extent of its breeding stations, which embrace the whole continent of North America. It arrives in Pennsylvania earlier than the other Swallows, or about the third week of March, begins to breed in April, and has commonly two broods in a season. Mr. Hutchins states that it breeds later than any other bird which frequents Severn River, sometimes not laying its eggs until near the end of July;

* We should have thought our species was the same as the *Hirundo fulva* of the Prince of Musignano, but for the following observation,—"The most striking characteristic of the *Hirundo fulva* (Bon.), is its even tail." (*Am. Orn.*, i., p. 64.) Ours is slightly, but distinctly forked.—Sw.

but he observes that it disappears, together with the rest of the Swallow tribe, in the middle of August. Hearne remarks that the Martins, though common in the southern parts of Hudson's Bay, seldom go so far north as Churchill. The whole history of the migratory birds proves that the main object of their wanderings is the obtaining a supply of proper food for themselves and their young. All quarters of the fur-countries abound in the winged insects that Swallows delight to feed upon; but, owing to the large bodies of ice which hang upon the northern shores of Hudson's Bay until the beginning of August, every breeze from the sea, which sweeps the neighbouring country, produces a depression of temperature sufficient to chill the insects and drive them to shelter; the supply of food to the Swallow tribe, consequently, in that district is so precarious as to render the rearing of their young difficult and uncertain. In the interior of the country, however, the case is different. When the snow is gone, the earth speedily becomes heated; and while the summer lasts, the temperature of the atmosphere continues higher than the hottest weather that is ever experienced in the insular climate of Britain, fostering incredible multitudes of mosquitoes. We observed thousands of these Sand Martins fluttering at the entrance of their burrows near the mouth of the Mackenzie, in the sixty-eighth parallel, on the 4th of July; and it is probable, from the state of the weather, that they had arrived at least a fortnight prior to that date. They are equally numerous in every district of the fur-countries wherein banks suitable for burrowing exist; but it is not likely that they ever rear more than one brood anywhere north of Lake Superior. The eggs of this species measure $17\frac{8}{10}$ lines in length.—R.

DESCRIPTION,

Copied from Wilson; no specimen having been brought to England by the Expedition.

"The Bank Swallow is five inches long and ten inches in extent; upper parts mouse-coloured [hair-brown]; lower white, with a band of dusky brownish across the upper part of the breast; tail forked, the exterior feather slightly edged with whitish; lores and bill black; legs with a few tufts of downy feathers behind; claws fine, pointed, and very sharp; over the eye a streak of whitish; lower sides of the shafts whitish; wings and tail darker than the body. The female differs very little from the male."—The yearling birds have their feathers bordered with rust colour.

[118.] 5. HIRUNDO PURPUREA. (Linn.) *Purple Martin.*

FAMILY, Hirundinidæ; *Sub-family*, Hirundinæ, SWAINS. *Genus*, Hirundo, LINN.
Great American Martin. EDWARDS, pl. 120; female.
Purple Swift. PENN. *Arct. Zool.*, ii., p. 431, No. 333.
Purple Martin (*H. purpurea*). WILS., v., p. 58, pl. 39, f. 1, 2.
Hirundo cœrulea (since *H. versicolor*). VIEIL. *Ois. de l'Am.*, pl. 26, 27.
Hirundo purpurea. SAB. *Frankl. Journ.*, p. 678. BONAP. *Syn.*, No. 71.
Sashun-peeshew. CREE INDIANS.

This large-sized, bold, and active Swallow is well known throughout the whole of North America. Though it arrives within the Arctic circle earlier than the others of its tribe, and is absent from the United States only for a short period in the middle of winter, it migrates far within the tropics. Mr. Swainson observed it in numbers round Pernambuco, eight degrees and a half south of the line. Mr. Audubon informs us that it arrives at New Orleans from the southward on the 28th of January; and Wilson states that it reaches Georgia late in February, and Pennsylvania about the 1st of April. It makes its first appearance at Great Bear Lake on the 17th of May, at which time the snow still partially covers the ground, and the rivers and lakes are fast bound in ice. In the middle of August it retires with its young brood from the fur-countries; and within a few days after that period it begins also to quit Pennsylvania. In the United States, and in many Indian villages, boxes or excavated gourds are hung up for the Purple Martin to breed in. It preys chiefly on the larger winged insects, such as wasps, bees, and beetles.—R.

DESCRIPTION.

COLOUR, pure and glossy violet-purple; quills, greater coverts, and tail pitch-black, faintly reflecting purple. *Lores* velvet-black. *Bill* and *legs* pitch-black.—A *female*, killed 25th June, on the Saskatchewan, has the *upper plumage* blackish-brown, merely glossed with violet-purple; forehead hair-brown, with grey edgings; throat and breast clove-brown, fringed with greyish-white. *Under plumage* white, with a few scattered hair-brown spots. A few of the interscapulars have the deep violet colour of the male, as if the plumage had been in a state of change when the bird was killed*.—R.

FORM aberrant. The *bill* is stronger, higher, and the culmen more curved than in the typical Swallows; the commissure also makes a bold curve from the rictus; and the margins of both mandibles are considerably inflexed in the middle, but at the base the upper one is dilated, and folds over the lower one much in the same manner as is seen in *Colaris*. The

* It corresponds with Edwards's figure above quoted, which was brought from Severn River by Mr. Isham.

first quill is decidedly the longest, and the lesser ones very deeply, but irregularly notched. The wings reach just to the end of the tail.—Sw.

DIMENSIONS

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	9	0	Length of bill to rictus .	0	11	Length of middle nail .	0	3
,, of tail . .	3	0	,, of tarsus . .	0	7	,, of hind toe . .	0	5½
,, of wing . .	6	2	,, of middle toe .	0	8	,, of hind nail .	0	3
,, of bill above .	0	5½						

[119.] 1. CAPRIMULGUS VOCIFERUS. (Wilson.) *The Whip-poor Will.*

FAMILY, Caprimulgidæ; *Sub-family*, Caprimulginæ, SWAINS. *Genus*, Caprimulgus, LINN.
The Whip-poor Will (*Caprimulgus vociferus*). WILS., v., p. 71, pl. 41, f. 1, 2, 3.
Caprimulgus vociferus. BONAP. *Syn.*, No. 68.

We observed this bird on the northern shores of Lake Huron only, the fiftieth parallel being probably the limit of its range. It arrives in Pennsylvania about the middle of April, and in a short time becomes so common in some districts as to disturb the repose of travellers by its melancholy nocturnal cry of "*Whip-poŏr-will!*" it retires during the day to the most secluded shades of the forest. The elevated, dry "Barrens of Kentucky" are its favourite resorts, and it is very seldom heard in low, marshy tracts of country. Its food consists of *Phalenæ* and other winged nocturnal insects. Its eggs have a greyish-white ground colour, nearly concealed by irregular and confluent blotches of umber, mixed with lines and spots of bluish-grey: they are obtuse at both ends, and measure one inch one line in length.

DESCRIPTION.

COLOUR.—Head, nape, scapulars, tertiaries, and rump, broccoli-brown and white, in minute dots, with central streaks and blotches of rich velvet-black. Back of the neck and interscapulars blackish-brown, dotted with brownish-grey. *Wings* dark umber, the coverts mottled and the quills barred with ferruginous, and the tips of the latter marbled with grey. Two central pairs of tail feathers mottled with blackish-brown and brownish-white, and obsoletely barred; the lateral feathers white, their bases black; the exterior one edged near the tip with the same. *Under plumage*:—Sides of the head and the throat greyish-black, barred with wood-brown; a white collar from ear to ear, almost obsolete on the middle of the throat. Front of the neck and shoulders dusky-brown, speckled on the tips with white and umber.

Belly and flanks tinged with wood-brown, and mottled and barred with umber. *Bill* blackish. *Legs* flesh-coloured.—The *female* is described by Wilson as about an inch shorter, with the *upper plumage* much lighter, as if powdered with meal; the ends of the lateral tail feathers cream-coloured; the bar on the throat brownish-ochre; the cheeks and region of the eyes brighter brownish-orange, which passes also to the neck, and is sprinkled with black and specks of white.—R.

Form typical in the bill, nostrils, and rictus. *Wings* an inch and a half shorter than the tail; the second quill longest; the third nearly equal to it; the first longer than the fourth: the second, third, and fourth are strongly notched externally, and the internal margins, for about an inch and a half from the tip, are disconnected, similar to what is seen in the Owls. The *tarsi* resemble those of *C. Virginianus*.—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	10	3	Length of bill above .	0	5	Length of middle toe	0	8
,, of tail . .	5	0	,, of bill to rictus .	1	2	,, of its nail . .	0	3
,, of wing . .	6	3	,, of tarsus . .	0	9			

[120.] 2. Caprimulgus (Chordeiles) Virginianus. (Sw.) *The Pisk.*

Sub-family, Caprimulginæ, Swains. *Genus*, Caprimulgus? Auct. *Sub-genus*, Chordeiles*, Sw.
Caprimulgus Americanus. Wils., v., p. 65, pl. 40, f. 1, 2. Sab. *Suppl. Parry's First Voy.*, p. cxciv.
Caprimulgus Virginianus. Bonap. *Syn.*, No. 69.
Peesquaw. Cree Indians.

Few birds are better known in the fur-countries than this, which ranges in summer even to the remotest Arctic islands. The very peculiar noise it makes is most frequently heard in the evening†, and often seems to be emitted close to the listener, although the bird which produces it is at the time so high in the air as to be nearly imperceptible. The sound resembles that produced by the vibration of a tense, thick cord in a violent gust of wind. The Pisk bears considerable resemblance to some of the *Falconidæ* in the evolutions it performs in the air, whence, and in allusion to its food, it obtains the appellation of Mosquito-Hawk at Hudson's Bay. It often remains stationary for several seconds,

* *Chorda crespusculi* (Th. χορδη et δυλη): in allusion to the peculiar sound it makes.
† In the high latitudes the sun does not set during the stay of this bird, which is not, therefore, so much a night bird as the *C. vociferus*.—R.

fluttering its wings rapidly, and then suddenly shoots off a long way by a gliding motion, the loud vibratory noise being heard at that moment. It also traverses the air backwards and forwards, quartering the sky as regularly as the Hen-Harrier surveys a piece of ground. The female deposits her eggs on the ground, without making any nest, generally selecting the border of a cultivated field or an open glade in the forest, and during incubation sits so close that she may be almost trodden down. When any person approaches her, the male sallies from the adjacent thicket and stoops at the intruder, passing within a foot or two of his head, then rising again and wheeling round to repeat the same manœuvre. In the meanwhile, his mate flutters from the nest along the ground as if disabled, and hides herself at a short distance among the grey grass, from which she can hardly be distinguished. The Pisk makes its first appearance at Great Bear Lake generally about the last day of May, and was observed hatching on the Saskatchewan on the 8th of June. According to Wilson, it does not winter even in Georgia. Its eggs are narrower than those of *Cap. vociferus*, but of the same colours, rather differently distributed: they measure nearly fourteen lines in length.—R.

DESCRIPTION

Of a *female*, killed on the Saskatchewan, June 10, 1827.

Colour.—Ground of the *upper plumage*, wings, tail, sides of the head, and front of the neck, dark liver-brown, with a greenish gloss. The head, neck, and upper rows of lesser wing coverts spotted with yellowish-brown; the back, scapulars, and tertiaries mottled with brownish-white and a little wood-brown, the pale colour forming speckled bars on the tail and its coverts; mottling on the intermediate wing coverts more copious and of a purer white; the greater coverts present only brown marginal spots. A band on the middle of the quills, commencing on the inner web of the first and ending with the fifth*, and a broad sagittate mark on the throat, pure white. A white-dotted superciliary band reaching to the nape. *Under plumage* and inner wing coverts marked with regular alternate bars of brownish-white and liver-brown. *Bill* blackish. *Legs* pale.—*Male* specimens in Mr. Swainson's museum have a white band on all the lateral tail feathers.—R.

Form.—*Bill* as in the typical species, but the rictus is completely destitute of bristles. The *wings* are remarkably long and Swallow-like, the first quill being the longest, the second nearly of equal length, but the others diminishing rapidly. None of the quills are emarginate on either shaft, nor are the margins formed for a noiseless flight, but are entire, like that structure seen in the Swallows. The *tail* is forked: the *feet* are represented in the annexed vignette.—Sw.

* The width and completeness of this band varies in different specimens.

Dimensions
Of the *female*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	10	6	Length of bill to rictus .	0	11	Length of middle nail .	0	2½
,, of tail . .	5	0	,, of tarsus . .	0	6	,, of hind toe . .	0	2
,, of wing . .	3	0	,, of middle toe . .	0	8	,, of hind nail . .	0	1½
,, of bill above .	0	3						

[121.] 1. Alcedo alcyon. (Linn.) *Belted Kingfisher.*

Family, Halcyonidæ; *Sub-family*, Halcyoninæ, Swains. *Genus*, Alcedo, Linn.
Belted Kingfisher. Penn. *Arct. Zool.*, ii., p. 273, No. 169.
Alcedo alcyon. Lath. *Syn.*, i., p. 257, sp. 32.
Belted Kingfisher (*Alcedo alcyon*). Wils., iii., p. 59, pl. 23, f. 1.
Alcedo alcyon. Sab. *Frankl. Journ.*, p. 677. Bonap. *Syn.*, No. 47.
Okees-kæ-mannæshew. Cree Indians.

This King-fisher, the only one that inhabits North America, frequents all the large rivers in the fur-countries up to the 67th degree of latitude, being more common, however, in the interior than near the sea-coast. It is a solitary bird, and is generally observed sitting on the stump of a tree that projects over the river. On the approach of a canoe, it flits onwards a few hundred yards to another perch, and will thus continue to precede a party of voyagers for several miles, readily suffering them, however, to come within gunshot before it quits its station. It has a harsh, clicking voice. Its food consists of small fishes, which it swallows whole, and, after digesting the soft parts, rejects the scales by the mouth. About the middle of May, when the rivers in the fifty-fourth parallel break up, it appears on the banks of the Saskatchewan, and by the middle of June it has attained its utmost northern limits. It departs southwards in September, to winter in Georgia, the Floridas, and even in the West India

islands, since Mr. Swainson possesses specimens sent from St. Vincent's by the Rev. Lansdowne Guilding. It breeds in holes dug in the precipitous banks of a river to the depth of several feet, laying five roundish, white eggs, one inch three lines in length.—R.

DESCRIPTION

Of a specimen, killed on the Slave River, lat. 59°.

Colour.—Top of the head, crest, back, scapulars, wing coverts, lesser quills, borders of the tail feathers, a broad irregular breast band, and blotches on the flanks, pale bluish-grey. Central stripes and tips of the crown and crest, the shafts of the dorsal plumage, the greater quills, their coverts, the inner webs of the secondaries, and the tail, pitch-black. A small spot before the eye, another on the under eyelid, some specks on the tips of the greater coverts, the basal halves of the primaries, outer tips and indented inner borders of the secondaries, twelve narrow interrupted bars on the tail, and the *under plumage*, white. The *bill* is bluish-black, its base beneath yellowish.—The *female* differs in being an inch and a half shorter, with a proportionably shorter bill, and in having the colour of her plumage more lively, more white on the wing, and the bluish-grey breast band edged with chestnut-brown, and some irregular blotches of reddish-orange on the flanks and belly.—R.

Form, typical of the American division, which is distinguished in all the species we have examined by a minute spurious quill at the base of what *appears* to be the first: the tail is also considerably longer than in the Blue Kingfishers of the Old World, and nearly all the quill feathers are very distinctly mucronate. The hind toe and claw is much shorter in this species than the smallest of the anterior toes. In other respects it does not deviate from the European type.—Sw.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	13	9	Length of bill to rictus	2	10	Length of middle nail	0	4
,, of tail	3	10	,, of naked thigh	0	4	,, of hind toe	0	2
,, of wing	6	6	,, of tarsus	0	4¼	,, of its nail	0	3
,, of bill above	2	2	,, of middle toe	0	8			

RASORES.

As nearly all the birds of this group, subsequently described, belong to the family of *Tetraonidæ*, we shall, in the following table, confine our attention to the genera composing it. We wish, however, to apprize the ornithologist, that this is more the result of theory than of that minute analysis upon which our arrangement of the Insessores is entirely founded: the primary laws which appear to regulate all the groups of that vast order may be traced in the following table, constructed more with reference to those laws than with a desire to discover the connecting links between the genera.

TETRAONIDÆ.

1. *Typical group?*	Tarsi naked; hallux perfect	Perdix, Lin.
2. *Sub-typical group?*	Tarsi feathered; hallux perfect	Tetrao, Lin.
3. *Aberrant group.*	Tarsi naked; hallux minute or obsolete . . .	Cryptonix, Tem.? Ortygis, Ill. Crypturus, Ill.

We are not prepared to demonstrate the accuracy of the designations given to the two first groups, since the question must be determined by analysing the Pavonidæ. We wish this point, therefore, to be considered as doubtful. The aberrant division is more definite, although some uncertainty hangs upon the situation of the Bustards and of *Cryptonix*. The family, however, is clearly of a subordinate rank; or, in other words, is only equivalent in value, in the number of its groups, to one of the *perfect* sub-families of the typical Insessores. Selecting the Genus

TETRAO,

we find a remarkable representation of the insessorial series in the following

SUB-GENERA.

1. *Typical group?*	Tail broad, the feathers truncate, slightly rounded; hinder toe longer than the nail; the anterior toes naked, with pectinated margins . . .	Tetrao, Lin.
2. *Sub-typical group?*	Tail shorter, nearly even; hinder toe shorter than the nail; anterior toes feathered, the margins not pectinated	Lagopus, Ray.

3. *Aberrant group.*	Tail forked and lyre-shaped	Lyrurus, Sw.
	Tail cuneated; wings long, pointed; hind toe very small or none	Syrrhaptes, Ill.
	Tail cuneated, scansorial; wings very short . .	Centrocercus, Sw.

As the typical sub-genus, in *perfect* groups, always contains species representing higher assemblages, we consider the Ruffed Grouse in that light; while the birds composing the genus *Pterocles* of M. Temminck appear to us no other than aberrant species of *Syrrhaptes**. This latter group obviously represents the Quails (*Coturnix*) (which belong to the true Partridges), and the genus *Ortygis*, Ill., of the sandy deserts of the Old World.—Sw.

[122.] **1. Tetrao umbellus.** (Linn.) *Ruffed Grouse.*

Genus, Tetrao, Linn. Swains. *Typical group*, 1, Swains.
Ruffed Heathcock. Edwards, pl. 248; young or female.
Tetrao umbellus et togatus. Linn. *Syst.*, Ed. x. Forst. *Phil. Trans.*, lxii., p. 393.
Ruffed Grous. Penn. *Arct. Zool.*, ii., p. 301, No. 179. Wils., vi., p. 45, pl. 49.
Tetrao umbellus. Sab. *Frankl. Journ.*, p. 679. Bonap. *Syn.*, No. 205.
Puspusquew, Crees. White Flesher and Pheasant, Anglo-Americans.

This very handsome Grouse exists as far north as the fifty-sixth parallel, and, according to the American naturalists, ranges southwards to the Gulf of Mexico†. It is very plentiful on the banks of the Saskatchewan, where it frequents the horse-paths and cleared spaces about the forts. In winter, when the ground is covered with snow, it perches, in flocks of ten or twelve, on trees; but in summer it passes most of its time on the ground. A flock may be approached without difficulty; and several birds may be successively shot from the same tree, without exciting alarm in the survivors, provided the lowest are marked off first. When once disturbed, they fly, like most of the Grouse, with a loud whirring sound,

* There can be no doubt regarding the analogical relations of *Lyrurus tetrix*, Sw., (the European Black Cock,) and the *Centrocercus urophasianus*, Sw., subsequently described; but we feel considerable doubt on the *value* of these types. This uncertainty always attends the investigation of imperfect groups. *Syrrhaptes*, however, is clearly a tenuirostral type; and, therefore, either *Lyrurus* and *Centrocercus* are the fissirostral and scansorial sub-genera, or they are the first modifications of form representing those groups in the sub-genus *Tetrao*. In the latter case, there would consequently be two sub-genera undiscovered: a supposition we cannot at present entertain.—Sw.

† Mr. Drummond procured specimens on the sources of the Peace River, in the valleys of the Rocky Mountains, which do not differ from those killed on the Saskatchewan. Mr. Douglas, however, found a variety at the same place, which was a third smaller, had greyer plumage and a shorter ruffle. Further observations, he thinks, may prove it to be a distinct species, which he proposes to designate *Tetrao umbelloïdes*.—*Linn. Trans.*, xvi., p. 148.

very swiftly, and generally to a considerable distance before alighting. The male, in spring, makes a very singular, loud noise, resembling the quick roll of a drum, which can be heard at a great distance, and is produced by rapid strokes of the wings. It is a very pleasant sight, on a fine sunny day, to observe this bird strutting about like a Turkey-cock, his wings drooping, tail erected, and ruffs displayed, showing off his finery to the females, who lie hid in the neighbourhood. The flesh of the Ruffed Grouse is very white and tender, but rather insipid.

DESCRIPTION

Of a *male*, killed May 4, on the Saskatchewan plains.

Colour.—Back, rump, and upper tail coverts chestnut-brown, mottled and finely undulated with blackish-brown; the broad tips and a cordiform central mark on each feather pale grey. Back of the neck, scapulars, and wing coverts having the same colours, but the grey tips very narrow, the blackish-brown in large blotches, and, instead of central marks, stripes along the shafts of orange-brown and brownish-white. Top and sides of the head, the tertiaries, and outer edges of the secondaries, mottled with the same. Eye stripe from the nostrils whitish. *Shoulder tufts* velvet-black, glossed with dark-green. *Quills* liver-brown, the outer webs barred near the base and mottled towards the tips with cream-yellow. *Tail* grey, finely undulated, and also crossed by about nine narrow bars and a broad subterminal one of blackish-brown. *Under plumage*:—throat and breast yellowish-brown, belly and vent brownish-white; all remotely barred, but most broadly on the sides of the belly, with blackish-brown, which also forms a band across the upper part of the breast between the ruffs. Inner wing coverts and axillaries clove-brown, barred and tipped with white. *Bill* and *nails* dark horn-colour.—A *male*, killed at the same time with the preceding, and of equal dimensions, shows more of the chestnut or orange-brown in its plumage, and the ground colour of its tail is yellowish-brown, the extreme tips and a bar next the broad subterminal dark one being grey.—*Females* have less of the blackish-brown colour; the shoulder tufts are orange-brown instead of black; and the subterminal bar on the tail chestnut-coloured. In the *young* birds the *orange-brown* is the prevailing tint of colour*.

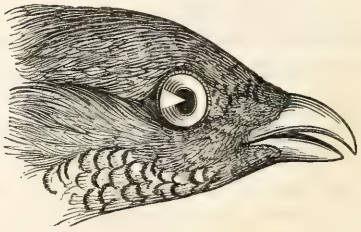
Form.—A short *crest* on the top of the head: a *fringed comb* over the eye in the male. *Shoulder tufts* consisting of about fifteen fan-shaped feathers. Fourth quill the longest, slightly exceeding the third and fifth. *Tail* fan-shaped, of eighteen feathers, the central pair more than half an inch longer than the outer ones: the individual feathers nearly square at the end. *Tarsus* feathered more than half way down anteriorly, and about half an inch lower posteriorly. All the toes strongly pectinated.

* After a careful comparison of the specimens of Mr. Douglas's *Tetrao Sabinii*, deposited in the Edinburgh Museum, they appeared to me to differ in no respect from the *young* of *Tetrao umbellus*; and the characters by which he distinguishes his bird are equally applicable to the latter:—(R.)

T. Sabinii, *rufus nigro notatus, dorso maculis cordiformibus, nuchâ alisque lineis ferrugineo-flavis, abdomine albo brunneo fasciato, rectricibus fasciatis: fasciâ sub-apicali latâ nigrâ.*—Dougl., *Linn. Trans.*, xvi., p. 137.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	18	0	Length of bill above . .	0	7½	Length of middle toe . .	1	7
,, of tail . . .	7	3	,, of bill to rictus .	1	0	,, of its nail . .	0	6
,, of wing . .	7	6	,, of tarsus . .	1	8	,, of hind toe . .	0	5
						,, of its nail . .	0	4



[123.] **2. Tetrao obscurus.** (Say.) *Dusky Grouse.*

Genus, Tetrao, Linn. Swains. *Typical group*, 1, Swains.
Tetrao obscurus. Say, *Long's Exped.*, ii., p. 202, An. 1823; female.
Tetrao Richardsonii. Douglas, *Linn. Trans.*, xvi., p. 141. Wils. *Illust.*, pl. xxx., xxxi.
Dusky Grouse (*Tetrao obscurus*). Bonap. *Orn.*, iii., pl. 18; *Syn.*, No. 207.

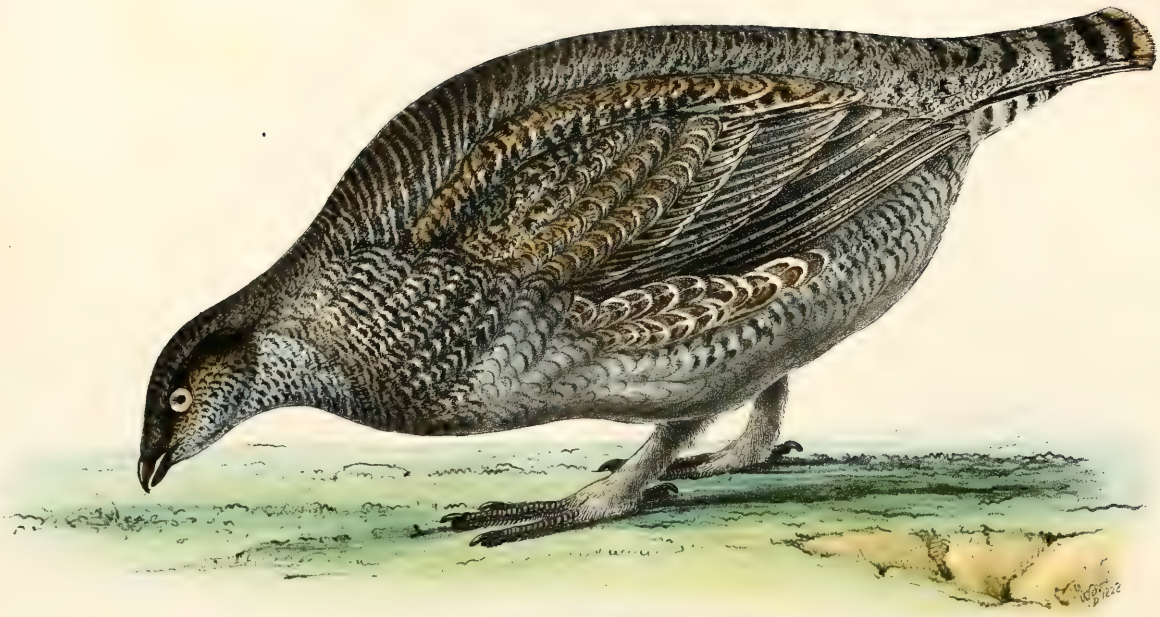
Plate lix. Male. Plate lx. Female.

This large Grouse inhabits the Rocky Mountains from latitude 40° to 64°, and perhaps to a greater extent, for the limits of its range either northward or southward have not been ascertained. It has been known to the fur-traders for nearly thirty years; but it was first introduced to the scientific world by Mr. Say, who, in 1820, accompanied Major Long to the source of the Missouri; and a female specimen, deposited by him in the Philadelphian Museum, has lately been figured by the Prince of Musignano in his splendid continuation of Wilson's *Ornithology**. I had no opportunity of observing the habits of this bird myself, but was informed by Mr. Drummond that, in the mornings during pairing time, the usual station of the male is on some rocky eminence or large stone, where he sits swelling out the sides of his neck, spreading his tail, and repeating the cry of "Coombe,

* The description and figure of Mr. Say's specimen agree so completely with our younger female specimens, that there can be no doubt of their specific identity; but it is proper to observe that there is some discrepancy in the dimensions. The Prince of Musignano states the total length of the bird to be eighteen inches, that of the wing nine inches and a half. The wing of the largest of our males is scarcely so long; while the biggest of our females, measuring twenty-one inches in total length, has a wing barely eight inches long. This, perhaps, merely indicates the uncertainty of measurements taken from prepared specimens. Mr. Douglas's specimens in the Edinburgh Museum are of younger birds than ours, but evidently the same species.—R.

TETRAO OBSCURUS. *Male*

London Printed for John Murray, Bookseller to the Admiralty, Jan.y 1.st 1831



TETRAO OBSCURUS. *Female*

London Printed for John Murray Bookseller to the Admiralty, Jan.ʸ 1.st 1831.

coombe," in a soft, hollow tone. Its food consists of various berries, and its flesh is very palatable. Mr. Alexander Stewart, a Chief-factor of the Hudson's Bay Company, who has often crossed the mountains, informs me that the males of this species fight each other with such animosity, that a man may take one of them up in his hand before it will quit its antagonist.

DESCRIPTION

Of a *male*, killed by Mr. Drummond on the Rocky Mountains.

Colour.—*Upper plumage* very dark liver- or blackish-brown; the wings paler; the top of the head glossed with hair-brown; the back of the neck very minutely undulated with lead-grey; the scapulars, tertiaries, and many of the wing coverts tipped with grey, and, together with the rump, finely undulated with yellowish-brown. *Quills* and borders of the wing above and below clove-brown; the secondaries edged round the tips with grey, and mottled on the edges with greyish-brown. *Tail* deep black. *Under plumage*:—Sides of the head and front of the neck pitch-black, passing to blackish-grey and dark lead-colour on the breast and middle of the belly. Lores, cheeks, chin, and upper part of the throat, barred with white. *Vent* brownish-white. Shortest *under tail coverts* white, intermediate ones barred with black and white, the longest black, tipped with white. *Flanks* blackish-brown, finely undulated with yellowish-brown, striped on the shafts and edged on the tips with white. *Axillary feathers* and greater part of the inner wing coverts pure white. On the side of the neck next the shoulders the base of the plumage is also pure white*. *Tarsal feathers* greyish-brown. *Bill*, *toes*, and *nails* blackish-brown. Papillated *comb* over the eye orange-yellow.—The yellowish-brown undulated lines on the rump are nearly obsolete in some specimens.

The *female* has the grey neck barred with dark-brown, the base of the neck, back, scapulars, and tertiaries, crossed by narrow bars of brownish-yellow, one or two on each feather, the tips finely undulated with brownish-grey; which tips are much broader on the rump and tail coverts. The wing coverts, fore part of the neck, and the flanks, are barred and mottled with a paler colour, approaching to wood-brown. The central pair of tail feathers are crossed by five mottled bars and tipped with spotted chestnut, and there are some indistinct indications of bars on the lateral feathers. The rest of the plumage as in the male.—Another *female* specimen, of the same dimensions, but probably an older bird, has the upper plumage of a paler liver-brown, and the bars and mottlings fewer, more indistinct, and of a greyer hue. The bars on the middle tail feathers are replaced by some slight marginal mottling. This bird has the upper mandible sinuated.—*Vide* vignette.

Form.—*Bill* narrower than that of *T. umbellus*. No crest. Fourth quill the longest; secondaries rounded, with a projection of the shaft more conspicuous than in *T. umbellus*, where it is confined to some of the posterior secondaries. *Tail* long and square, composed of twenty broad feathers, broadest and truncated at the ends: in the female, the tail feathers

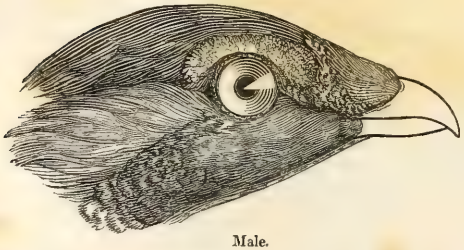
* At this part the plumage of the upper and under surfaces of the neck separates and admits of the naked skin being puffed out at the pleasure of the bird.—R.

are narrower and not dilated at the tips. *Tarsus* completely feathered; several feathers also springing from the first phalanx of the middle toe. *Toes* pectinated.

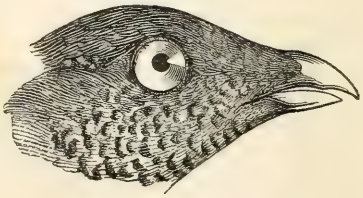
Dimensions.

	Male. Inch.	Lin.	*Female.* Inch.	Lin.		*Male.* Inch.	Lin.	*Female.* Inch.	Lin.
Length, total	24	0	19	0	Length of tarsus	1	8	1	6
,, of tail	8	0	5	6	,, of middle toe	1	8	1	6
,, of wing	9	0	8	0	,, of middle nail	0	6	0	5
,, of bill above	0	8	0	8	,, of hind toe	0	6	0	5½
,, of bill to rictus	1	3½	1	3	,, of hind nail	0	4	0	4

Our specimens, both male and female, vary two inches in their total length,—the measurements being taken from specimens stretched out and not mounted.—R.



Male.



Female.

[124.] 3. Tetrao Canadensis. (Linn.) *The Spotted Grouse.*

Genus, Tetrao, Linn. Swains.
Black and Spotted Heathcock (*Urogallus maculatus*). Edwards, pl. 180.
Brown and Spotted Heathcock (*Urogallus minor*). Idem, pl. 71.
Tetrao Canadensis et canace. Linn. *Syst.*, i., pp. 274, 275.
Spotted Grouse. Penn. *Arct. Zool.*, ii., p. 307, No. 182.
Tetrao Canadensis. Sab. *Frankl. Journ.*, p. 683. Bonap. *Orn.*, iii., pl. 21, f. 1; female.
Wood-partridge, Spruce-partridge, or Swamp-partridge. Residents at Hudson's Bay.
Mistic-apeetheyoo or Eithinyoo-apeetheyoo, Crees. Day, Chipewyans.
Meescootæshoo, Algonquins. Le Perdrix du Savanne, French Canadians.

Plate lxii. Female.

All the thick and swampy black spruce-forests between Canada and the Arctic Sea abound with this bird. According to the Prince of Musignano, it descends, in the winter, to Main, Michigan, and the northern parts of New York; but its migrations must be partial, as it exists in considerable numbers in the severest seasons as high as the sixty-seventh parallel. Mr. Douglas says that, west of the Rocky

TETRAO CANADENSIS. *Dar.*

T. Franklinii. Doug.

Female.

London Printed for John Murray Bookseller to the Admiralty Jan.ʸ 1.ˢᵗ 1831.

Mountains, it is replaced by the *Tetrao Franklinii*. It generally perches on fir-trees, in flocks of eight or ten; and is so unsuspicious, or rather stupid, that it may be taken by slipping a noose, fastened to the end of a stick, over its head. When disturbed, it flies heavily for a short distance, and then settles again among the interior branches of a tree. In the winter, I found its crop invariably filled with the leaves of the black or white spruce; and its flesh was then very dark, and had a strong resinous taste. I have been informed that, in districts where the *Pinus Banksiana* grows, it prefers the leaves of that tree. In the summer it is said to feed on berries, which may render its flesh more palatable. Mr. Hutchins states that its eggs are spotted with black, yellow, and white.

DESCRIPTION

Of a *male*, killed on the eastern declivity of the Rocky Mountains.

Colour.—*Upper plumage*, including the wing and tail coverts, also the flanks and middle of the neck beneath, marked with concentric semicircular bars of pitch-black and yellowish-brown or brownish-grey,—the paler colour always forming the terminal bar, and being broadest and most inclined to grey on the neck above and posterior part of the back; on the base of the neck, scapulars, and tertiaries, the black predominates, and the narrower bars are yellowish-brown; and on the lesser wing coverts and flanks the bars of these two colours are equal in breadth, but on the latter the colours are brighter and the shafts are striped on the tips with long triangular white marks, as are also those of some of the scapulars. Four lateral pairs of tail coverts have only a terminal grey bar, but are finely undulated throughout with yellowish-brown. Outer edge of the wing, primary coverts, and quills, clove-brown; the greater quills mottled exteriorly, and the lesser ones edged and tipped with wood-brown. *Tail* pitch-black, with reddish-orange tips, broadest on the lateral feathers, and finely edged with black. *Under plumage*:—nasal feathers, sides and under surface of the head, with part of the throat, the breast, adjoining part of the neck, middle of the belly, and under tail coverts, velvet-black; the latter broadly tipped with white; the belly, sides of the breast, and a narrow band across it, marked with subterminal bars of the same; also a spot behind the nasal feathers, another behind the upper eyelid, the under eyelid, and a line bounding the cheeks and throat, barred and mottled with white. Inner wing coverts and axillaries clove-brown, the latter and part of the former tipped and striped on the shafts with white. *Bill* and *nails* blackish. *Fringed comb* over the eye bright red.

A *female*, in full *winter* plumage, killed at Great Bear Lake, has the feathers on the back of the neck, back, and rump broadly tipped with grey and barred with blackish-brown and pale brownish-orange. *Wings* with more of the yellowish-brown than in the male,—the white marks on the tips of the scapulars and flanks being much larger, and there being similar ones on the tertiaries and many of the wing coverts. *Tail* black, mottled throughout, and tipped with reddish-orange. *Under plumage* broadly barred with white and black, the white tipping all the feathers. On the breast there are some bright wood-brown bars.—

Younger females have the brownish-orange and yellowish-brown bars more conspicuous over the whole plumage above and below, but particularly on the neck, and the black and white less pure and in smaller quantity. The tail also more mottled; the terminal bar narrower.

Form.—*Bill* smaller than that of *T. umbellus*. No distinct crest, although the feathers of the crown are capable of erection. Third and fourth quills equal and longest. *Tail*, of sixteen feathers, considerably rounded. *Tarsus* thickly feathered, particularly behind, where the feathers are long and hair-like. Some tufts of feathers spring from the short webs that connect the anterior toes. *Toes* naked and pectinated.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	17	0	Length of bill to rictus .	0	11	Length of middle nail .	0	6
,, of tail . .	5	6	,, of tarsus . .	1	5	,, of hind toe .	0	4½
,, of wing . .	7	4½	,, of middle toe .	1	5	,, of its nail . .	0	3½
,, of bill above .	0	7						

The old *females* are of nearly equal dimensions.—R.

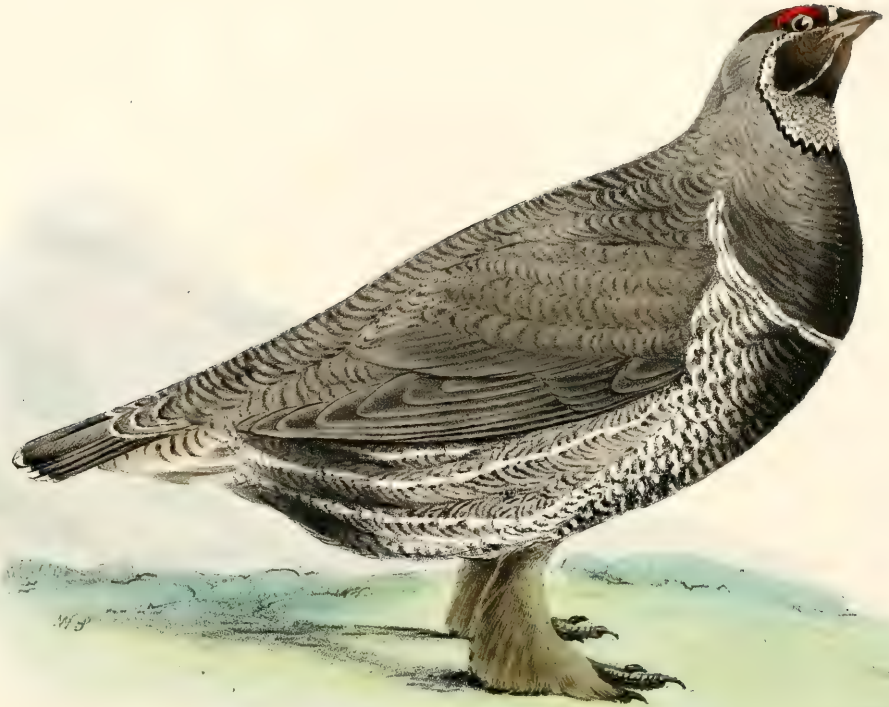
Female from Great Bear Lake.

[125.] 4. Tetrao Franklinii. (Dougl.) *Rocky Mountain Spotted Grouse.*

Tetrao Franklinii. Douglas, *Linn. Trans.*, xvi., p. 139, sp. 4.
Tetrao Canadensis, var. Bonap. *Orn.*, iii., p. 47, pl. 20; male.

Plate lxi. Male.

There is such a close resemblance between this and the common Canadian Grouse (*T. Canadensis*), that the Prince of Musignano considers it only as a variety; and this opinion is entertained also by Mr. Drummond, a very acute practical observer: the latter had ample opportunities of studying the manners



TETRAO CANALENSIS. Dav.

T. Franklinii. Doug.

Male

London Printed for John Murray Bookseller to the Admiralty &c. 1st 1834

of both, and he assures us that he is not aware of any difference between them. Mr. Douglas, on the other hand, who has also seen these birds in their native regions, thinks differently; and although he observes that in habit it assimilates more with *T. Canadensis* than any other, he considers the "unusually long, square tail," and its colouring, as sufficiently distinctive characters. In our specimens the tail is not longer than in *Canadensis;* and did we look to the colouring alone, however strikingly different it is in the two birds, we should be disposed to class them as varieties. But a more accurate examination will detect some essential differences in the structure of the feathers themselves: those of *Canadensis* are more graduated, giving the tail a rounder appearance; and they are all slightly, but distinctly emarginate in the middle, from whence rises a little *mucro* or point, formed by the end of the shafts. Now this emargination is not seen in *Franklinii,* nor is there any appearance of the *mucro.* Again, in the latter bird the tail feathers are much broader, fully measuring one inch and a fifth across; whereas those of *Canadensis* are barely one inch broad. Until, therefore, we become persuaded that distinctions drawn from structure are not to be relied upon, we must coincide with Mr. Douglas in considering the present as a distinct species.—Sw.

This bird inhabits the valleys of the Rocky Mountains from the sources of the Missouri to those of the Mackenzie, and Mr. Douglas informs us that it is sparingly seen on the elevated platforms which skirt the snowy peaks of Mount Hood, Mount St. Helen's, and Mount Baker. He adds, "It runs over the shattered rocks and among the brushwood with amazing speed, and only uses its wings as a last effort to escape. It forms its nest on the ground, of dried leaves and grass, not unfrequently at the foot of decayed stumps, or by the side of fallen timber in the mountainous woods. The eggs are dingy white, and somewhat smaller than those of *Columba palumbus.*"—R.

DESCRIPTION

Of a *male,* killed near the sources of the Athabasca, lat. 56°.

Colour.—Plumage of a mature male *Tetrao Canadensis,* except that six pairs of *upper tail coverts* are broadly tipped with white, and the tail is a little longer and wants the orange-coloured terminal band. The middle pair of *tail feathers* are narrowly tipped with white, as is sometimes the case in *T. Canadensis,* particularly the females. The ends of the tail feathers are more truncated and their webs broader than in the latter bird. The *female* can scarcely be distinguished from the female *T. Canadensis.*

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	17	6	Length of bill to rictus .	0	11	Length of middle nail .	0	5
,, of tail . .	7	9	,, of tarsus . .	1	4½	,, of hind toe .	0	4¼
,, of wing . .	7	4	,, of middle toe . .	1	4	,, of its nail . .	0	3
,, of bill above .	0	6						

—R.

Male.

[126.] 5. Tetrao (Lagopus) mutus. (Leach.) *The Ptarmigan.*

Genus, Tetrao, Linn. Swains. *Sub-genus* (2), Lagopus, Ray.
Ptarmigan. Penn. *Brit. Zool.*, i., p. 359, pl. 57; upper figure.
Lagopus mutus. Leach. *Brit. Mus.* Idem, *Gen. Zool.*, ii., p. 287; omitting synonymes.
Tetrao lagopus. Sab. (Capt.) *Suppl. Parry's First Voy.*, p. cxcvii. Sab. (J.) *Frankl. Journ.*, p. 682. Richards. *App. Parry's Second Voy.*, p. 350.

According to Captain Sabine, this bird inhabits the islands lying on the south-west side of Baffin's Bay, as well as the loftiest mountains in Scotland. I have never had the fortune to meet with it myself in the fur-countries; but a specimen, in summer plumage, sent to Sir John Franklin from Churchill River, was identified by Joseph Sabine, Esq., with the Scotch Ptarmigan,—thus establishing it as an inhabitant of the American continent. I have not been able to trace that specimen; and I am informed that the only authentic examples from the New World are now in the possession of Lord Stanley, to whom they were presented by Mr. Sabine. The Ptarmigan is an inhabitant of high hills, where it keeps near the snow line: the Rock Grouse frequents sub-alpine districts and more level stony tracks and moors*.—R.

* *Scotch specimens*, killed on the 1st of October on the mountains of Cairngorm, and presented to me by Sir George Sitwell, Bart., have the whole *dorsal plumage*, scapulars, tertiaries, neck, breast, and sides under the wings, marked with very fine zig-zag lines of pitch-black and brownish-grey; a few reddish-orange bars appearing on the neck only

[127.] 6. Tetrao (Lagopus) saliceti. (Swains.) *Willow Grouse.*

Genus, Tetrao, Linn. *Sub-genus*, Lagopus, Vieillot.
The White Partridge (*Lagopus*). Edwards, pl. 72; male in spring*.
Tetrao lagopus. Forst. *Phil. Trans.*, lxii., p. 390.
White Grous. Penn. *Arct. Zool.*, ii., p. 308, No. 183.
Rehusak Grous. Idem, p. 316; E.
Willow Partridge. Hearne, *Journ.*, p. 411.
Tetrao saliceti. Temm., ii., p. 471. Sab. *Frankl. Journ.*, p. 681. Richards. *Append. Parry's Second Voy.*, p. 347, No. 7.
Wawpeethæo, Crees. Kasbah, Chipewyans. Akkai-diggæuck, Esquimaux.

The Willow Grouse inhabits the fur-countries from the fiftieth to the seventieth parallels of latitude, within which limits it is partially migratory; breeding in the valleys of the Rocky Mountains, the barren grounds, and Arctic coasts; collecting in flocks on the approach of winter, and retiring southward as the severity of the weather increases; considerable bodies, however, remaining in the woody tracts as far north as latitude 67°, even in the coldest winters. It is tolerably abundant in the sixty-fifth parallel all the year, and assembles in vast flocks on the shores of Hudson's Bay in the winter time. Mr. Hutchins has known ten thousand captured in a single season at Severn River, and Sir Thomas Button and other navigators speak of still greater multitudes. In the year 1819, its earliest appearance at Cumberland House, lat. 54°, was in the second week of November; and it returned to the northward again before the beginning of spring. The species seems to be identical with the Willow Grouse of the Old Continent, which inhabits the greater part of Scandinavia, Kamtskatcha, Greenland, and Iceland, and also the valleys of the Alps. In America, these Grouse shelter themselves in the winter in thickets of willow and dwarf-birches, on the banks of marshes and lakes, the tops and buds of the shrubs constituting the principal part of their food at that season. Denuded

of the males, but more generally towards the base of the plumage in the females. The *wings* (with the exception of the tertiaries and deep black quill shafts), the whole belly, posterior flanks, under tail coverts, and legs, are snow-white; and there are also two or three scattered white feathers on the back. The *tail* consists of sixteen feathers, the lateral ones greyish-black, slightly tipped with white, more distinctly as they are nearer the middle. The middle pair are inserted a little above the plane of the others, and consequently are somewhat incumbent; they have much broader white tips, and in some specimens are otherwise nearly black, in others they are marked like the dorsal plumage. The coverts, two pairs of which equal the tail in length, are coloured like the back. *Nails* black.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	16	6	Length of bill to rictus	0	10	Length of middle nail	0	7
,, of tail	4	3	,, of tarsus	1	4	,, of hind toe	0	2
,, of wing	7	6	,, of middle toe	1	0½	,, of its nail	0	4
,, of bill above	0	7½						

—R.

* As it appears in the beginning of May, lat. 65°, or towards the end of March, lat. 50° N.—R.

sandy spots are favourite resorts in the daytime; but they pass the night in holes in the snow. When pursued by a sportsman or bird of prey, they often terminate their flight by diving precipitately into the loose snow, endeavouring to escape by working their way beneath the surface, which they do with considerable celerity. In thick, windy, or snowy weather they are very shy, and then often perch on the taller willows, when it requires a sharp eye to distinguish them from flakes of snow. In the breeding-season they feed mostly on the berries of the *empetrum nigrum*, *vaccinium vitis idæa*, and *arbutus alpina*, which are exposed by the first thaws, and do not disappear until replaced by the new crop. At the commencement of this period they begin to lose their snow-white winter dress, the male changing first, his head and neck becoming red, and, when viewed from a distance, contrasting so strongly with the white body, as to appear as if they were stripped of their feathers and quite raw. The beginning of June is the period of incubation, and the female then moults, the delay being admirably suited to her habits and well calculated to insure her safety. The male puts on his coloured plumage as soon as the rocks and eminences most exposed to the sun become bare, and at a time when he is accustomed to stand on a large stone and call in a loud, croaking voice to the females, that hide themselves in their white dress among the unmelted snow on the more level ground. Like most other birds that summer within the Arctic circle, they are more in motion in the milder light of night than in the broad glare of day. I had no opportunity of seeing the eggs. Mr. Hutchins says they are whitish; while Temminck states that they are marbled and spotted with marks of a dark venous-blood red on a soiled white or pale-reddish ground.

DESCRIPTION

Of the *winter plumage*. *Male*, killed in December, lat. 61°.

Colour, snow-white (when recently killed early in winter beautifully tinged with lake-red); shafts of six greater quills brownish, and fourteen tail feathers pitch-black, tipped with white, more conspicuously on the interior feathers*. *Bill* black. Small and slightly fringed *superciliary comb* scarlet-red. *Nails* white, with dark bases.

Form.—Third or fourth quill longest. *Tail* slightly rounded. *Tarsi* and *feet* covered, and the latter thickly cushioned beneath with hair-like feathers. *Nails* thin and scoop-shaped.

* There are also two pairs of white feathers incumbent on the middle of the tail and of equal length with it, which by many ornithologists are reckoned as tail feathers. The middle pair of these have brownish shafts and want the internal accessory downy feather, which the adjoining pair, the other tail coverts, and all the plumage of the body, have. The language will vary, of course, according to the opinions of naturalists on this point. We count sixteen feathers in the tail of the Willow Grouse, reckoning the middle incumbent pair.—R.

Spring plumage.—A *male*, killed in May, lat. 65¼° N. Head and neck deep orange-brown, changing towards the shoulders to dusky chestnut; each feather on the crown and nape crossed by a subterminal bar of pitch-black, and on the base of the neck many zig-zag lines of the same: the scapulars, tertiaries, tail coverts, and several short, scattered feathers on the back and rump, coloured like the base of the neck. Nostril feathers, circumference of the bill, and the eyelids, with the rest of the plumage of the body, white. Fourteen black tail feathers; the central incumbent pair white. *Superciliary comb* larger and more conspicuously fringed than in winter.

Summer plumage.—A *male*, killed in July, lat. 56°, on the Rocky Mountains. Back, rump, shorter tail coverts, scapulars, tertiaries, and two lower rows of wing coverts, barred alternately with pitch-black and yellowish-brown. Sides of the breast, flanks, and part of the under tail coverts, orange-brown, barred with black. Rest of the plumage as in spring. The white tips of the tail nearly worn off, and the toes entirely naked beneath and partially so above.—A specimen, killed a *fortnight later*, differed merely in having recently moulted its tail feathers; the fourteen black ones of different lengths were rather broadly tipped with white; the central incumbent pair young, but growing up white: all the tail coverts coloured.

In the *female* the ground colour of the upper plumage is pitch-black, which is barred with ferruginous, the black bars being broader than in the male.—Towards the end of *autumn* the Willow Grouse resume their winter livery, the change commencing on the body and finishing on the neck. This second change is not by a reproduction of feathers, but by the coloured ones becoming white, the process commencing on their tips. The alteration takes place in scattered feathers, which at the same time lengthen; and in a week or ten days the change is complete. Spotted specimens undergoing this change may be distinguished from spring ones at once, by the worn state of the tarsal feathers.

Dimensions

Of the *male* in winter.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	16	6	Length of bill to rictus	0	10½	Length of hind toe	0	2
,, of tail	5	3	,, of tarsus	1	5	,, of hind nail	0	5
,, of wing	7	9	,, of middle toe	1	2			
,, of bill above	0	8	,, of its nail	0	8	Weight, about 1½ lb.		

—R.

Male.

[128.] 7. Tetrao (Lagopus) rupestris. (Leach.) *Rock Grouse.*

Genus, Tetrao, Linn. *Sub-genus*, Lagopus, Vieillot.
Rock Grous. Penn. *Arct. Zool.*, ii., p. 312, No. 184. Lath. *Syn. Suppl.*, p. 217.
Tetrao rupestris. Lath. *Ind.*, ii., p. 640, sp. 11.
Tetrao lagopus. Temm., ii., p. 468.*
Tetrao rupestris. Sab. *Suppl. Parry's First Voy.*, p. cxcv. Richards. *Append. Parry's Second Voy.*, p. 348, No. 8.
Lagopus rupestris. Leach, *Gen. Zool.*, ii., p. 290.
Uscathăcheesh, Cree Indians. Kasbah-yazzeh, Chipewyans.

Plate lxiv. Female.

This bird was first described by Pennant as a distinct species, principally on the authority of Mr. Hutchins, and was adopted into the compilations of Latham and Gmelin; but it was reserved for Captain Sabine to point out clearly the differences between it and the *Tetrao lagopus* of the Highlands of Scotland; the principal of which are, the colours and markings of the summer plumage, and the size: the Rock Grouse being smaller, having more of the brownish-yellow in its summer dress, broader bars of black, and none of the cinereous tint which predominates in the Ptarmigan†. If the latter visits the settlements on Hudson's Bay otherwise than accidentally, of which there is much doubt, Hearne and some other writers have confounded the two species under the name of Rock Grouse; and, indeed, in their winter dress the only perceptible difference between the two seems to be size; hence we can learn nothing certain from these authors of the distribution of the species. Hutchins reports that the Rock Grouse is numerous at the two extremities of Hudson's Bay, but does not appear at the middle settlements (York and Severn factories), except in very severe seasons, when the Willow Grouse are scarce; and Captain Sabine informs us that they abound on Melville Island, lat. 74° to 75°, in the summer. It arrived there in its snow-white winter-dress on the 12th of May, 1820; at the end of that month the females began to assume their coloured plumage, which was complete by the first week in June, the change at the latter period being only in its commencement with the males. Some of the males were killed as late as the middle of

* Captain Sabine says, "A specimen recently received from M. Temminck as his European *lagopus* differs from our *Tetrao rupestris*, from Melville Island, only in its reddish-orange markings being more vivid and predominant."

† Captain Sabine observes that "the distribution of the coloured plumage of the Rock Grouse corresponds both in the male and female with the Ptarmigan, the same parts of both species remaining white; but there is much difference in the colour itself; the upper plumage of the Ptarmigan is cinereous, with undulating and narrow black lines and minute spots; whereas in the Rock Grouse each feather is black, cut by transverse broad lines or bars of a reddish-yellow, which do not reach the shaft, and have spaces of black between them broader than themselves: the feathers are tipped, in the male, with a light colour, that approaches to white in the female."

LAGOPUS RUPESTRIS.

Drawn

London Printed for John Harris, 9 Chapter House Court, Paternoster Row, 1825.

June in their unaltered winter plumage. In this respect the species differs from the Willow Grouse, whose males first assume the summer colours. The Rock Grouse is found also on Melville Peninsula and the Barren Grounds, seldom going farther south in winter than latitude 63° in the interior, but descending along the coast of Hudson's Bay to latitude 58°, and in severe seasons still farther to the southward. It also occurs on the Rocky Mountains as far south as latitude 55°. It exists in Greenland, is common in Norway, is known in Sweden by the name of *sno rissa*, and is the species most frequent in the museums of France and Italy under the name of *Tetrao lagopus*. It is not a native of Scotland. The Rock Grouse in its manners and mode of living resembles the Willow Grouse, except that it does not retire so far into the woody country in winter. Contrary, however, to what Hearne says, it is frequent in open woods on the borders of lakes in that season, particularly in the sixty-fifth parallel of latitude, though perhaps the bulk of the species remains on the skirts of the Barren Grounds. It hatches in June. The ground colour of the egg is, according to Captain Sabine, a pale reddish-brown, and is irregularly blotched and spotted with darker brown.

DESCRIPTION

Of the *winter plumage*. Fort Franklin, lat. 65½° N.

Colour, snow-white; the shafts of six greater quills and fourteen tail feathers pitch-black, the latter narrowly tipped with white. *Bill* black. *Nails* whitish, dark at the base*.—The *male* has a black eye stripe from the nostrils to the hind head.

Form.—*Bill* narrower at the base and more compressed throughout than that of the Willow Grouse, also longer and narrower than that of *Tetrao lagopus* (Scotch specimen). Third and fourth quills the longest. *Tail* very slightly rounded, consisting of sixteen feathers (fourteen black ones and two white incumbent ones, which, with a pair of the coverts, are rather longer than the rest of the tail)†. *Tarsi* and *toes* feathered as in the Willow Grouse; the nails rather more compressed, but otherwise similar to the latter.

Summer plumage.—A *female*, killed on the Rocky Mountains, lat. 55°. Head, neck, back, scapulars, tertiaries, part of the intermediate coverts, and the *under plumage*, barred with blackish-brown and brownish yellow, the dark colour predominating above and the yellow beneath; most of the dorsal plumage bordered on the tips with brownish-white. The remainder of the wing above, its whole surface beneath, and the axillaries, white; the quill shafts slightly tinged with brown. The vent feathers yellowish-brown. The *tail*, consisting

* The length of the nails varies greatly in different specimens and at different seasons. When long they are whitish, except at the base; when short, dark coloured throughout.—R.

† Captain Sabine states this species to want the incumbent feathers, which exist in *T. lagopus*, or to have only fourteen tail feathers, of which the middle pair change colour; but his specimens were killed in summer, when part of the tail feathers are frequently wanting. The *tail* is nearly the same as in *T. lagopus*.—R.

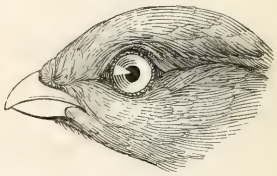
of fourteen black feathers, with the white tips worn off, and of two central incumbent feathers, which, with the adjoining coverts, are barred like the back. Tarsal feathers very short; the toes naked beneath, and partially so above.—No summer specimens of the *male* were brought home; but that sex differs in having the black eye stripe, and in the middle of the belly being white.

Dimensions

Of the summer *female*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	14	0	Length of bill to rictus	1	0	Length of middle nail	0	8
,, of tail	4	0	,, of tarsus	1	4½	,, of hind toe	0	1¾
,, of wing	7	0	,, of middle toe	1	0	,, of its nail	0	4
,, of bill above	0	7						

—R.



[129.] 8. Tetrao (Lagopus) leucurus. (Swains.) *White-tailed Grouse.*

Genus, Tetrao, Linn. Swains. *Sub-genus* (2), Lagopus, Ray.

Ch. Sp. Tetrao (*Lagopus*) leucurus *hyeme albus : æstate variegatus, rectricibus semper albis.*
Sp. Ch. White-tailed Grouse, in winter entirely white ; in summer coloured : the tail white.

Plate lxiii.

Of this undescribed species I have only five specimens, four procured by Mr. Drummond on the Rocky Mountains, in the fifty-fourth parallel, and one by Mr. Macpherson on the same chain, nine degrees of latitude farther north. Mr. Douglas killed several in 1827, but, through the want of means of carriage, was obliged to leave them behind. It is said to have the habits of the Ptarmigan, and to inhabit the snowy peaks near the mouth of the Columbia as well as the lofty ridges of the Rocky Mountains. Its summer dress is intermediate in colour between that of *T. lagopus* and *rupestris;* but it differs from both these species in its smaller size and in its tail being totally white at all seasons. The sexes of my specimens were not noted; but none of them have the black eye stripe ; and Mr. Dummond, who killed great numbers, is confident that that mark does not exist in either sex.

LAGOPUS LEUCURUS.

Summer plumage

London Published by John Murray Bookseller to the Admiralty Jan.ʸ 1ˢᵗ 1831.

DESCRIPTION

Of a *winter* specimen, lat. 54°.

Colour, snow-white to the base of the plumage; quill shafts also white. *Bill* bluish or greyish-black. *Nails* dark horn-colour, their edges pale.—Form.—*Bill* less compressed than that of *T. rupestris*. *Wings* proportionally longer; scarcely an inch shorter than the tail: third and fourth quills longest. *Tail* very slightly rounded laterally; of sixteen feathers; the middle pair incumbent on the others. *Tarsi* and *toes* thickly feathered. *Nails* like those of *T. saliceti*.

A specimen, evidently in the act of *assuming its winter dress*, has the base of the whole upper plumage blackish-grey; also a few straggling feathers on the breast and head, and the bases of the tail coverts, partially clove-brown, cut by slender lines of yellowish-brown; and the quill shafts umber-brown towards their tips.—A *spring* specimen (lat. 54°) has the inner webs of the second primaries sprinkled with clove-brown, the whole surface of the bird continuing white; but on spreading aside the plumage of the head and back, a number of young feathers are seen bursting from their sheaths, having blackish-brown webs, crossed by several bars of deep ochre-yellow, very similar to the markings of *T. rupestris*. The feet of this specimen are worn partially bare, and the toes are shortly pectinated near the nails, which are also very short.

A *summer* specimen (lat. 54°). Head and neck shortly barred with blackish-brown and pale wood-brown or brownish-white; the front of the neck paler. Dorsal plumage, tail coverts, scapulars, tertiaries, and the posterior lesser coverts, blackish-brown, cut about half way to the shafts by rather coarse ochraceous bars, intermixed with nearly an equal number of feathers ochraceous throughout and thickly undulated with fine black lines. The breast, belly, and flanks are mostly pale ochre, broadly blotched and barred with blackish-brown, intermixed on the belly with some white feathers, and on the breast with a few of the finely undulated ones. The vent, legs, tail (which is only partially grown), the outer border of the wing, primaries, secondaries, and greater coverts, are white. The toes partially naked, not pectinated: the nails short and much worn.

A *summer* specimen, noted as *young*, has the dorsal plumage consisting mostly of the ochraceous finely undulated feathers, fading on the head and neck to grey, and greatly resembling the plumage of *T. lagopus* (of Scotland). The under plumage is duller and less strongly barred, and there is less white on the wing than on the more mature specimen,—the spurious wing, primary coverts, third and fourth greater quills, and two of the lesser ones being clove-brown, with a slight mottling of yellowish-white. The white tail feathers are only bursting from their sheaths, the long coverts being coloured like the back. Feet and claws like those of the preceding specimen. The wing of this young bird is a quarter of an inch shorter than that of the other four*.

* I think it probable, from attentive consideration of the different specimens, that neither of the summer ones are mature, and that the fine zig-zag markings will prove to be peculiar to the young; if so, the full summer plumage of the old bird will nearly resemble that of *T. rupestris*, except that the tail is white.—R.

Dimensions
Of the *winter* specimen.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	12	0	Length of bill to rictus .	0	10	Length of middle nail .	0	6
,, of tail . .	4	0	,, of tarsus . .	1	4	,, of hind toe . .	0	2
,, of wing . .	6	9	,, of middle toe .	1	1½	,, of its nail . .	0	4
,, of bill above .	0	6						

—R.

[130.] 9. Tetrao (Centrocercus) urophasianus. (Swainson.) *Cock of the Plains.*

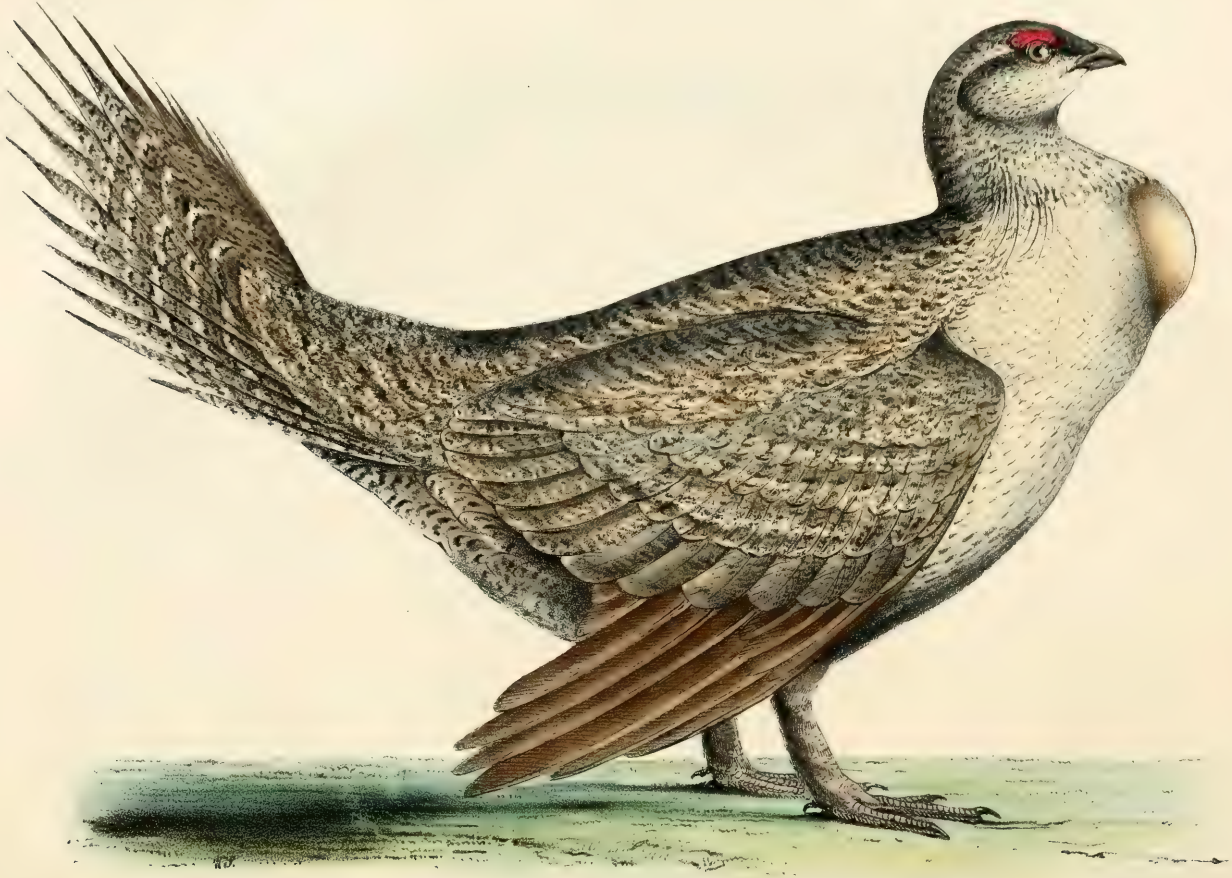
Genus, Tetrao, Linn. *Sub-genus*, Centrocercus* (Type 3), Swains.
Cock of the Plains. Lewis & Clark, *Journ.*, p. 473.
Tetrao urophasianus. Bonap. *Zool. Journ.*, iii., p. 212. Dougl. *Linn. Trans.*, xvi., p. 133, sp. 1.
Bonap. *Orn.*, pl. 21, f. 1; young male? Wils., *Illustr.*, pl.
Pyàmis. Kyuse Indians.

Plate lviii.

This bird, which was first mentioned by Lewis and Clark, has since become well known to the fur traders that frequent the banks of the Columbia. Several specimens have been sent to England by the agents of the Hudson's Bay Company: a male and female are mounted in their museum;—and others having come into Mr. Leadbeater's hands, one of them has been figured by the Prince of Musignano. Mr. David Douglas also brought home specimens, from one of which Mr. Wilson's figure was taken. It is to Mr. Douglas that we owe the following account of the manners of the species, the only one hitherto published:—

"The flight of these birds is slow, unsteady, and affords but little amusement to the sportsman. From the disproportionately small, convex, thin-quilled wing,—so thin, that a vacant space half as broad as a quill appears between each,—

* Th. κεντρον, *cuspis*, et κιρκος, *cauda*.



CRITTOCIRCUS URUPHASIANUS.

the flight may be said to be a sort of fluttering, more than anything else: the bird giving two or three claps of the wings in quick succession, at the same time hurriedly rising; then shooting or floating, swinging from side to side, gradually falling, and thus producing a clapping, whirring sound. When started, the voice is '*Cuck, cuck, cuck,*' like the common Pheasant. They pair in March and April. Small eminences on the banks of streams are the places usually selected for celebrating the weddings, the time generally about sunrise. The wings of the male are lowered, buzzing on the ground; the tail, spread like a fan, somewhat erect; the bare yellow œsophagus inflated to a prodigious size,—fully half as large as his body, and, from its soft, membranous substance, being well contrasted with the scale-like feathers below it on the breast, and the flexile, silky feathers on the neck, which on these occasions stand erect. In this grotesque form he displays, in the presence of his intended mate, a variety of attitudes. His love-song is a confused, grating, but not offensively disagreeable tone,—something that we can imitate, but have a difficulty in expressing—'*Hurr-hurr-hurr-r-r-r-hoo,*' ending in a deep, hollow tone, not unlike the sound produced by blowing into a large reed. Nest on the ground, under the shade of *Purshia* and *Artemisia,* or near streams, among *Phalaris arundinacea,* carefully constructed of dry grass and slender twigs. Eggs, from thirteen to seventeen, about the size of those of a common fowl, of a wood-brown colour, with irregular chocolate blotches on the thick end. Period of incubation twenty-one to twenty-two days. The young leave the nest a few hours after they are hatched." "In the summer and autumn months these birds are seen in small troops, and in winter and spring in flocks of several hundreds. Plentiful throughout the barren, arid plains of the river Columbia; also in the interior of North California. They do not exist on the banks of the river Missouri; nor have they been seen in any place east of the Rocky Mountains."—R.

DESCRIPTION

Of a *male,* in the Hudson's Bay Museum*.

Colour.—General ground colour of the upper plumage light hair-brown, mottled and variegated with dark umber-brown and yellowish-white. Each feather of the back has three bands of yellowish-white at equal distances from each other: the lowest is narrow, the middle one broad, and the outer one tips the feather and is almost obsolete; between these the colour is hair-brown, prettily marked with small, irregular zig-zags of light hair-brown; these colours cross the shaft: but on the wing covers and scapulars the shafts are all marked by a narrow, conspicuous line of yellowish-white. There are about eight bands of this colour

* Since the above was written, presented to the British Museum.

on the tail, the lower ones tolerably defined, but those towards the ends obscure: the margins are zig-zagged, and bordered by dark umber-brown, with irregular zig-zag lines of the same, upon a light hair-brown ground, between each bar. The quills, as is usual in this genus, are light and almost unspotted, and the narrowed extremities of the tail are almost black. *Under plumage*, white and unspotted on the breast and part of the body; but dark umber-brown, approaching to black, on the lower half of the body and part of the flanks; the latter towards the vent are marked as on the upper plumage. Under tail coverts black, broadly tipped with white. Feathers of the thighs and tarsi light hair-brown, mottled with darker lines. Throat and region of the head varied with blackish on a white ground, in too indefinite and unequal a manner for description. The shafts of all the feathers on the breast are black, rigid, and look like hairs; but those of the scale-like feathers of the sides are white and thicker. *Bill* and *toes* blackish.

Form.—*Bill* thick and strong, but more compressed than in the typical species; the ridge of the culmen is advanced to a remarkable extent towards the front, and divides the thickset feathers which cover the nostrils by a convex ridge of three-quarters of an inch long. This is a very peculiar and important character, since it plainly indicates the analogy of this form to *Cassicus*, *Scaphidurus*, *Buceros*, *Ramphastos*, *Rallus*, and numerous other rasorial types. On each side the breast the present specimen exhibits two prominent, naked protuberances, as in the female bust, perfectly destitute of hairs or feathers; their situation seems to be more forward than the analogous naked parts of *Tetrao cupido*, these latter being in that part of the neck which in all birds is more or less bare, but which in the present species is covered with thick and fine down, obviously concealed in the living bird by the junction of the front and back feathers of the throat. On each side of these protuberances, and higher up on the neck, is a tuft of feathers, having their shafts considerably elongated and naked, gently curved, and tipped with a pencil of a few black radii; these tufts occur at the same part as those of *T. umbellus*, to which they are analogous; but as they are placed (in this specimen) much *behind* the naked protuberances, they do not appear intended to cover them when not inflated. On the sides of the neck and across the breast, below the protuberances, the feathers are particularly short, rigid, and acute, laying over each other with the same compactness and regularity as the scales of a fish, excepting that their extremities are not rounded, but acutely pointed. Lower down the breast these feathers, however, begin to assume more of the ordinary shape; but the shafts still remain very thick and rigid, while each is terminated by a slender, naked filament, hornlike, shining, and somewhat flattened towards the end, where there are a few obsolete radii. Beyond these the feathers of the rest of the body are of the ordinary construction. *Wings*, in proportion to the size of the bird, very short; the lesser quills ending in a small *mucro* or point. *Tail* rather lengthened and considerably rounded, each feather lanceolate, and gradually attenuated to a fine point. *Tarsi* somewhat elevated, thickly clothed with feathers to the base of the toes, and over the membrane which connects them: the inner toe and claw shorter than that of the external one by full three-tenths of an inch; hind toe moderate, double the length of its claw.

In the *female* the colours of the whole upper plumage, tail, wing covers, tertiaries, front of the neck, and sides of the breast, are dark umber, or blackish-brown and yellowish-white,

irregularly barred and mottled in nearly equal quantities; but the dark colour forming larger blotches towards the base, and the lighter one bars on the tips and stripes on the shafts. Fore part of the belly white, barred with black; hinder parts black. The plumage of the breast and neck is of the ordinary form, there being neither the scale-like feathers nor projecting shafts of the male.

Dimensions

Of mounted specimens.

	*Male.** Inch.	Lin.	*Female.* Inch.	Lin.		*Male.* Inch.	Lin.	*Female.* Inch.	Lin.
Length, total	31	6	22	6	Length of tarsus	2	7		
,, of tail	11	7	8	0	,, of middle toe and claw	2	4		
,, of wing	13	0	10	6	,, of outer ditto	1	$8\frac{1}{2}$		
,, of bill above	1	7	1	4	,, of inner ditto	1	5		
,, of bill to rictus	1	$3\frac{3}{5}$	1	3	,, of hind ditto	0	$8\frac{1}{2}$		

—Sw.

[131.] 10. Tetrao (Centrocercus) phasianellus. (Swains.) *Sharp-tailed Grouse.*

Genus, Tetrao, Linn. *Sub-genus*, Centrocercus, Swains.
Long-tailed Grouse (*Urogallus minor*). Edwards, iii., pl. 117; a poor figure.
Tetrao phasianellus. Linn. *Syst.*, p. 160. Forster, *Phil. Trans.*, lxii., pp. 394, 425.
Sharp-tailed Grous. Penn. *Arct. Zool.*, ii., p. 306, No. 131. Hearne, *Journ.*, p. 408.
Tetrao phasianellus. Sab. *Frankl. Journ.*, p. 680. Bonap. *Orn.*, iii., p. 37, pl. 19.
Tetrao urophasianellus. Dougl., *Linn. Trans.*, xvi., p. 136; young.†
Awkiscow, Cree Indians. Pheasant, Hudson's Bay Residents.

The northern limit of the range of the Sharp-tailed Grouse is Great Slave Lake, in the sixty-first parallel; and its most southern recorded station is in latitude 41°, on the Missouri. It abounds on the outskirts of the Saskatchewan plains, and is found throughout the woody districts of the fur-countries, haunting open glades or low thickets on the borders of lakes, particularly in the neighbourhood of the trading-posts, where the forests have been partially cleared. In winter it perches generally on trees, in summer it is much on the ground; in both seasons assembling in coveys of from ten to sixteen. Early in spring, a family of these birds select a level spot, whereon they meet every morning, and run round in a circle of fifteen or twenty feet diameter, so that the grass is worn quite bare‡. When any one approaches the circle, the birds squat close to the

* This skin, though originally very perfect, has been so much distorted, that it is impossible to ascertain from it the true form and size. As far as we can judge, the length of the bird when alive seems to have been 25 inches.—Sw.

† On examination, Mr. Douglas's specimens in the Edinburgh Museum appeared to me to be merely the young of the Sharp-tailed Grouse, with ferruginous plumage.—R.

‡ These circles resemble the "fairy rings" of the Scottish moors.—R.

ground, but in a short time stretch out their necks to survey the intruder; and, if they are not scared by a nearer advance, soon resume their circular course, some running to the right, others to the left, meeting and crossing each other. These "Partridge-dances" last for a month or more, or until the hens begin to hatch. When the Sharp-tailed Grouse are put up, they rise with the usual whirring noise, and alight again, at the distance of a few hundred yards, either on the ground, or on the upper branches of a tree. Before the cock quits his perch, he utters repeatedly the cry of "*Cuck, cuck, cuck.*" In winter they roost in the snow like the Willow Grouse, and they can make their way through the loose wreaths with ease. They feed on the buds and sprouts of the *Betula glandulosa*, of various Willows, and of the aspen and larch; and in autumn on berries. Mr. Hutchins says that the hen lays thirteen white eggs, with coloured spots, early in June; the nest being placed on the ground, and formed of grass, lined with feathers.

DESCRIPTION

Of a *male*, killed at Great Slave Lake, November, 1826.

Colour.—Crest, forehead, a line from the rictus under the eye, ear feathers, and cheeks, blackish-brown, with pale edgings. Hind head and back of the neck shortly barred with brownish-white, yellowish-brown, and blackish-brown. *Dorsal plumage*, scapulars, tertiaries, and most of the wing coverts, yellowish-brown, approaching to ferruginous, broadly but irregularly barred, and sparingly dotted with blackish-brown; these dark bars having a peculiar divergent, tricuspid form on the back and rump. Scapulars, tertiaries, and wing coverts tipped with triangular white spots. The quills and the broad upper and anterior borders of the wing clove-brown; the secondaries tipped with white, and crossed by three bars of the same; the greater quills having about eight white bars on their outer webs only. *Tail* white, the shafts blackish-brown; the middle pair of feathers much striped and barred with blackish-brown, and a few blotches of the same on the two adjoining pairs. *Under surface*:—lores, superciliary stripe, both eyelids, chin, and part of the throat, brownish-white. Front of the neck white and ferruginous, barred with blackish-brown. Base of the neck beneath, the breast, and shoulders, beautifully marked with white arrow-headed spots, bounded by dark brown: the plumage fringed with white. Flanks coloured like the back, but with more white. Rest of the under plumage, inner wing coverts, and axillaries, pure white; the fore part of the belly marked with concealed dark brown lanceolate stripes. Tarsal feathers pale soiled brown. *Bill* umber-brown; pale horn-colour beneath. Fringed *superciliary comb* bright red. *Toes* bluish-grey. *Nails* dark.—*Females* killed on the Saskatchewan differ in the ground colour of the middle tail feathers being brownish-orange, and the forehead and crest barred with the same; the ferruginous tint of the plumage brighter and more general, and the arrow-headed marks on the breast less acute, and not so handsome or well defined. The *crests* are smaller and the superciliary *combs* scarcely visible.

Form.—*Bill* stronger than that of any of the preceding Grouse, except *T. urophasianellus:* margin of the upper mandible sinuated. *Crest* springing from the forehead and crown rather pointed and narrow. *Third quill* the longest. *Tail* much graduated, consisting of eighteen narrow, strap-shaped feathers, the central pair* an inch longer than the adjoining ones and three inches longer than the outer ones. All the feathers, but particularly the more exterior ones, are worn in a peculiar manner on the edges, the truncated ends remaining broader, rendering their outline somewhat fiddle-shaped. *Tarsi* and webs at the base of the toes feathered. *Toes* pectinated, with long, slender processes. *Nails* slightly curved, tapering, acute.

Dimensions.

	Male. Inch.	Lin.	*Female.* Inch.	Lin.		*Male.* Inch.	Lin.	*Female.* Inch.	Lin.
Length, total	20	0	16	0	Length of tarsus	1	11	1	10
,, of tail	7	6	5	0	,, of middle toe	1	7	1	6½
,, of wing	8	6	8	0	,, of middle nail	0	6	0	6
,, of bill above	0	8	0	7¾	,, of hind toe	0	7	0	6½
,, of bill to rictus	1	2	1	2	,, of hind nail	0	4½	0	4

—R.

[132.] 1. Columba (Ectopistes) migratoria. (Sw.) *Passenger Pigeon.*

Genus, Columba, Linn. *Sub-genus*, Ectopistes†, Swains.
Columba migratoria. Forster, *Phil. Trans.*, lxii., p. 398, No. 19.
Passenger Pigeon. Penn. *Arct. Zool.*, ii., p. 322, No. 187. Wils., v., p. 102, pl. 44, f. 1; male.
Columba migratoria. Sab. *Frankl. Journ.*, p. 679. Bonap. *Syn.*, No. 200.
Mimewuck. Cree Indians.

This celebrated bird arrives in the fur-countries in the latter end of May, and departs in October. It annually attains the sixty-second degree of latitude in the warmer central districts, but reaches the fifty-eighth parallel on the coast of Hudson's Bay in very fine summers only. Mr. Hutchins mentions a flock of these pigeons visiting and staying two days at York Factory, in 1775, as a remarkable occurrence. A few hordes of Indians, that frequent the low, flooded tracts at the south end of Lake Winipeg, subsist principally on the pigeons during a period of the summer when the sturgeon-fishery is unproductive, and the *Zizania aquatica* has not yet ripened; but, farther north, these birds are too few in number to furnish a material article of diet. In Canada, throughout the

* The two central pairs of tail feathers would be more properly, perhaps, termed long coverts; their barbs are softer, and their webs do not wear away on the edges (or at least not so strongly) as the true tail feathers.—R.

† Th. εκτοπιζω, *peregrè abeo.*

United States, and round the Gulf of Mexico, the Passenger Pigeon appears at uncertain intervals, and for longer or shorter periods, but often in numbers that are scarcely credited by those who have not beheld them*. Thus Wilson informs us that they repair every morning to certain places in the western forests in such countless multitudes, that their dung covers the ground to the depth of several inches, all the grass and underwood is destroyed, and the trees themselves killed, over *thousands of acres*, as completely as if girdled by an axe. The object of this locust-like visitation is the beech-mast; and the devastation is not repaired till after a long lapse of years. These spots are termed Pigeon-roosts, and are perhaps fifty or sixty miles distant from the breeding-places, which are no less remarkable and still more extensive. The author we have just quoted describes one which he visited, in Kentucky, as forty miles long and several miles wide; every tree loaded with nests, and the ground strewed with broken branches, eggs, and young squab Pigeons, which had fallen from above, and on which large herds of hogs were fattening. From twenty feet upwards to the tops of the trees there was a perpetual tumult and fluttering of crowds of Pigeons, their wings roaring like thunder; while the birds of prey were sailing over head in great numbers, and seizing the squabs at pleasure†. There were often above a hundred nests on a single tree, each containing one young bird only; and the frequent fall of large branches, broken down by the multitudes which clung to them, destroyed numbers of the birds, and rendered it dangerous for any one to walk beneath. The Pigeons came to the breeding-place on the 10th of April, and left it with their young before the 25th of May. It is after this period that they resort to the fur-countries to breed; and it is probable that several broods are raised in a season at different places.—R.

DESCRIPTION

Of a *young male*, killed near Philadelphia, in Mr. Swainson's museum.

Colour.—General colour of the upper plumage light umber-brown, blending into yellowish-brown on the scapulars, the outer webs of the tertials, and the margins of the primary quills, where this latter colour becomes brighter and more reddish: the head, neck, and part of the wing coverts are clove-brown; the ends of the feathers whitish, forming little curved bars or crescents. Outer half of the lesser wing coverts and the lower part of the back and rump delicate light lavender purple, changing gradually on the tail and upper

* Wilson estimates a flock, which continued to fly over his head in an equal stream for the greatest part of a day, to have been a mile in breadth and two hundred and forty miles in length,—comprehending, at three pigeons to a square yard, upwards of two thousand two hundred and thirty millions.

† M. Audubon has recently given equally striking statements.

coverts into clove-brown. *Under plumage*, throat, and breast clove-brown, each feather marked with a terminal whitish crescent. Chin, body, flanks, and under tail coverts, dull white. Tail feathers, with the middle pair, clove-brown; the others with a basal spot of rufous and a central black band on their inner webs; the tips nearly white, and the ground colour lavender-purple upon all except the outer feather, which is marked upon a pure white ground. *Bill* black. *Legs* dull red.

Form, compared with the Wood Pigeon.—*Bill* of a similar structure, but more slender: a slight festoon on the margin of the upper mandible towards the tip. *Wings* more pointed, the first and second quill being of equal length, and longer than the third by four-tenths of an inch: all the remainder diminish rapidly, with intervals of from four to five-tenths between each: the ends of the lesser quills are obliquely truncated at their outer shafts. *Tail* lengthened, cuneated; all the feathers progressively narrowing towards their extremities, which are obtuse. *Tarsi* moderate, slightly longer than the hind toe and its claw; the upper half clothed with feathers, the lower defended in front by transverse scales. Anterior outer toes and claws unequal, the exterior being obviously the shortest (in the Wood Pigeon these toes are equal); middle, hinder, and interior claws of the same size; the exterior smaller.* —Sw.

* As ornithologists do not appear to be aware of the great difference which exists in the groups of this family, in the relative structure of their feet, we shall here draw their attention to the principal groups. In the even-tailed Wood Pigeons of Europe, North America, and the Old World, forming the restricted genus *Columba*, the external and internal anterior toes are equal. In the lovely genus *Ptilinopus*, Swains., confined to the Green Pigeons of the Indian and Australian isles, and in that of *Vinago*, Cuv., formed by the thick-billed species of the same countries, the inner toe is much *shorter* than the outer; but in the sub-genus (?) *Ectopistes*, Swains., and the small Turtle Doves, this proportion is reversed, the *inner* toe being the longest. In the beautiful genus *Peristera*, Swains., which comprises all the bronze-winged Pigeons of Australia and the Ground Pigeons of America, the tarsi are more elevated, the hind toe shorter, and the inner toe is likewise the longest. We have been for some time engaged in analyzing this family, with a view of ascertaining the relative value of all these groups.—Sw.

GRALLATORES.—*THE WADERS.**

None of the Waders winter in the fur-countries. They arrive generally between the third week of April and middle of May, and depart again early in September, part lingering, however, on the flat shores of Hudson's Bay till the middle of October, when the progress of winter drives the last of them to a milder climate.

[133.] 1. Calidris arenaria. (Illiger.) *The Sanderling.*

Genus, Calidris, Illiger.
Ruddy Plover. Penn. *Arct. Zool.*, ii., p. 486, No. 404 ; summer.
Sanderling (*Charadrius calidris*). Idem, No. 403. Wils., vii., p. 68, pl. 59, f. 4.
Ruddy Plover (*Charadrius rubidus*). Wils., l. c., pl. 63, f. 3.
Sanderling variable (*Calidris arenaria*). Temm., ii., p. 524.
Tringa (*Calidris*) *arenaria*. Bonap. *Syn.*, No. 257.
Mistehay-chekiskawêseesh. Cree Indians.

This bird breeds on the coast of Hudson's Bay as low as the fifty-fifth parallel. Mr. Hutchins informs us that it makes its nest in the marshes, rudely of grass, and lays four dusky-coloured eggs, spotted with black,—incubation commencing in the middle of June. It feeds chiefly on marine insects.

DESCRIPTION

Of the bird in its summer dress.†

Colour.—Dorsal plumage, wing coverts, top of the head, neck, tail coverts, breast, and flanks, black in the centres, bordered with ferruginous, and fringed with white; the black spots larger, and the ferruginous borders deeper on the scapulars. Four first quills brown externally and on the tips ; their inner webs and the bases of the other quills, with the whole *under plumage*, white. Rump grey. Middle pair of tail feathers blackish-brown, slightly edged with ferruginous ; the others soiled white. *Bill* and *legs* black. *Wings* equal with the tail. Middle tail feathers longest. *Toes* (three) quite free. *Total length* 8 inches. *Extent of wing* 14 inches. *Weight* 31 drachms avoirdupois.

* For the reason assigned in p. 328, Mr. Swainson has been unable to continue his remarks on the natural groups ; and it being desirable that no attempt at a natural arrangement should be offered, unless it has been tried, as in the preceding sheets, by the test of strict analysis, we have given the Grallatores in the order in which they occur in Temminck's *Manual*, as being one of the most generally received of the artificial systems.—R.

† From Hutchins's MSS., there being no specimen in our collection.—R.

[134.] 1. Charadrius semipalmatus. (Bonap.) *American Ring Plover.*

Genus, Charadrius, Linn.
Ring Plover (*Tringa hiaticula*). Wils., vii., p. 65, pl. 59, *f.* 3.
Charadrius hiaticula. Sab., *Frankl. Journ.*, p. 684. Richards. *Append. Parry's Second Voy.*, p. 351, No. 11.*
Charadrius semipalmatus. Bonap. *Syn.*, No. 216.
Keesquaw-the-napæsees, Cree Indians. No. 26, Huds. Bay Mus.

This small Plover abounds in Arctic America during the summer, where it breeds in similar situations to the Golden Plover. Mr. Hutchins reports that its eggs, generally four, are dark coloured, spotted with black; and the natives say that, on the approach of stormy weather, this Plover makes a chirruping noise, and claps its wings. After quitting the fur-countries, it halts about a month on the shores of New Jersey, and then proceeds farther south.

DESCRIPTION

Of a *male*, killed, July 26, 1822, on Hayes River, lat. 57° N.

Colour.—*Upper plumage* hair-brown; broad sincipital band, line encircling the base of the bill above, crossing the lores, and spreading over the auriculars †, ring round the base of the neck, which dilates on the breast, and ends of the quills and tail, black. Forehead, chin, throat, ring encircling the neck, tips of the greater coverts, middles of the quill shafts, marginal tips and part of the inner webs of the lesser quills, stripes on the outer webs of one or two of the posterior secondaries, whole of the exterior tail feather, tips of the three adjoining pairs, and all the *under plumage*, white. *Bill* orange, tipped with black. *Orbits* yellow. *Irides* brown. *Legs* soiled orange.

Form.—*Bill* typical. Tip of the *tongue* thin and rounded. *Wings* a little shorter than the tail, which is slightly rounded. *Toes* connected bythickish webs, that include two phalanges of the outer toe and one of the inner one: margins of the toes thickened. (In *Ch. pluvialis* and *vociferus* the first joint only of the outer toe is united by a web to the middle one, the inner toe being free.)

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	7	0	Length of tarsus	0	11	Length of exterior web	0	2¾
,, of tail	2	6	,, of naked thigh	0	6½	,, of inner web	0	1½
,, of wing	4	6	,, of middle toe	0	7	Extent of wing	14	0
,, of bill above	0	6	,, of middle nail	0	2			
,, of bill to rictus	0	6½						

Weight, 1½ oz.

—R.

* The resemblance which this bird bears to the Greater-ringed Plover of Europe is very great; and following Temminck, who quotes Wilson's figure (pl. 59) as an exact representation of the European bird, I referred it to that species in the Appendix to Sir Edward Parry's Second Voyage. The Prince of Musignano has since pointed out its specific characters.—R.

† According to the Prince of Musignano, the black colour of the sincipital band and the auriculars is confined to the adult.

[135.] 2. Charadrius vociferus. (Linn.) *Kildeer Plover.*

Genus, Charadrius, Linn.
Noisy Plover (*Charadrius vociferus*). Penn. *Arct. Zool.*, ii., p. 484, No. 400.
Kildeer Plover (*Char. vociferus*). Wils., vii., p. 73, pl. 59, f. 6.
Charadrius vociferus. Sab. *Frankl. Journ.*, p. 683, Bonap. *Syn.*, No. 219. Vigors, *Birds of Cuba, Zool. Journ.*, xii., p. 448.

This Plover arrives on the Saskatchewan plains about the 20th of April; and at that season frequents the gardens and cultivated fields of the trading-posts with the utmost familiarity, in search of food. It hovers over the head of any one who disturbs it, reiterating a loud, shrill cry, which is supposed to resemble the word *kildeer*. It is found within the United States the whole year, keeping on the sea-coast during winter.

DESCRIPTION

Of a specimen, killed on the Saskatchewan, April 20, 1827.

Colour.—A band from the rictus, passing over the ears, the upper surface of the head, nape, base of the neck above, fore part of the back, scapulars, lesser wing coverts, and tertiaries, dark hair-brown, the ragged edges of the plumage showing vestiges of rust-coloured borders; posterior part of the back and the tail coverts bright buff-orange. Quills and greater coverts pitch-black, tipped with white; edge of the wing also white, and a band of the same crosses the middle of the outer webs and inner borders of the quills, becoming much broader on the posterior secondaries. *Tail* rust-coloured at the base, broadly barred with black towards the end; the two central pairs of feathers tipped with ferruginous, the lateral ones with white. A sincipital band, prolonged laterally over the eyes, the chin, the throat, and a nuchal ring, the upper part of the breast, and the *under plumage*, pure white. A frontal band between the eyes, a neck collar, and a pectoral belt, black. *Bill* black. *Legs* ochre-yellow.

Form.—*Bill* smaller than that of the Golden Plover. *Tail* graduated, more than an inch longer than the wings.

In *winter* the dorsal plumage is mostly edged with brownish-orange.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	11	3	Length of bill above .	0	10	Length of naked thigh .	0	6
,, of tail . .	4	3	,, of bill to rictus .	1	0	,, of middle toe .	0	10½
,, of wing . .	6	4	,, of tarsus . .	1	6	,, of its nail . .	0	2

R—.

[136.] 3. Charadrius pluvialis. (Linn.) *The Golden Plover.*

Genus, Charadrius, Linn.
Spotted Plover (*Pluvialis viridis ventre nigro*). Edwards, pl. 140.
Alwargrim Plover (*Charadrius apricarius*). Penn. *Arct. Zool.*, ii., p. 483, No. 398.
Golden Plover (*Charadrius pluvialis*). Idem, No. 399. Wils., vii., p. 71, pl. 59, f. 5.
Pluvier doré (*Ch. pluvialis*). Temm., ii., p. 535.
Charadrius pluvialis (*Golden Plover*). Sab. (Capt.) *Suppl. Parry's First Voy.*, p. cxcix.
Sab. (J.) *Frankl. Journ.*, p. 683. Bonap. *Syn.*, No. 220.
Toodleearioo, Esquimaux. Hawk's Eyes, Hudson's Bay Residents.

The breeding-quarters of this well-known bird are the Barren Grounds and the coasts and islands of the Arctic Sea. It hatches early in June, and retires southwards in August. Numbers linger on the muddy shores of Hudson's Bay, and on the sandy beaches of rivers and lakes in the interior, until the hard frosts of September and October drive them away. At this period they are very fat, and are highly prized by the epicures of the fur-countries. They make but a short stay in Pennsylvania, and are said to winter beyond the United States.

DESCRIPTION

Of a *male*, killed in the breeding season, May 29, 1822, lat. 65°.

Colour.—A pure white sincipital band, prolonged over the eyes and down the neck to the breast. Ground of the upper plumage greenish-black, regularly spotted on the tips and margins with lemon-yellow. On the wing coverts the spots are whitish. Greater coverts and primaries unspotted; tips of the former and middles of the shafts of the latter whitish. *Tail* barred with darker and lighter shades of clove-brown; the tips of all the tail feathers, and also the lighter bars of the outer ones, being nearly white. Region of the bill, lores, and whole *under plumage*, reddish-black, spotted with yellow on the sides of the breast under the wing. Under tail coverts partially white. Insides of the wings and long axillaries yellowish-grey. *Bill* and *legs* black.

Form, typical. *Tongue* pointed, entire.

In *winter* the under plumage is white, tinged with yellowish-grey like the wing linings, palest on the under tail coverts; neck and breast yellowish-grey and greyish-white in alternate spots or bars; region of the bill, forehead, eye stripe, and chin, white, with brown spots.—At the commencement and termination of the breeding season many individuals are seen with the under plumage varied with black and white*.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	10	6	Length of bill above .	0	10	Length of middle toe	0	11½
,, of tail . .	3	3	,, of bill to rictus .	1	1	,, of its nail . .	0	2¾
,, of wing . .	7	5	,, of tarsus . .	1	8	Extent of wing . .	22	0

* According to Temminck, this is the dress of the immature birds.

[137.] 1. Vanellus melanogaster. (Bechst.) *Grey Lapwing.*

Genus, Vanellus, Briss.
Tringa helvetica. Forster, *Phil. Trans.*, lxii., p. 412, No. 43.
Swiss Sandpiper. Penn. *Arct. Zool*, ii., p. 478, No. 396.
Grey Sandpiper (*Tringa squatarola*). Idem, p. 477, No. 393.
Black-bellied Plover (*Charadrius apricarius*). Wils., vii., p. 41, pl. 57, f. 4.*
Vanneau Pluvier (*Vanellus melanogaster*). Temm., ii., p. 547.
Vanellus melanogaster. Sab. *Frankl. Journ.*, p. 684. Richards. *Append. Parry's Second Voy.*, p. 352, No. 12.
Charadrius (Squatarola) Helveticus. Bonap. *Syn.*, No. 221.
Toolee-areeoo or Tooglee-aiah. Esquimaux.

This bird is observed in the fur-countries in similar places to those frequented by the Golden Plover, though it is not equally common. It breeds in open grounds from Pennsylvania to the northern extremity of the continent. Its eggs are oil-green, spotted irregularly with different shades of umber-brown: the spots crowded and confluent round the obtuse end.

DESCRIPTION

Of a specimen, killed at Hudson's Bay, lat. 57°, Aug. 14, 1822.

Colour.—Whole upper surface of the head, the under eyelid, back of the neck, shoulders, vent, thighs, and tail coverts above and below white, the dark base of the plumage partially appearing on the neck, and a few brown bars on the tips of the upper tail coverts. *Rump* clove-brown, with whitish tips. Rest of the *dorsal plumage*, the wing coverts, and tertiaries variegated with white and greenish-black, the white generally forming broad bars on the tips and sides of the feathers; bastard wing, greater quills, and their coverts, blackish-brown, the latter tipped with white; middles of the quill shafts and of the outer webs of the sixth and succeeding primaries, and the bases and borders of the secondaries, white. Orbits, part of the upper eyelid, the lores, chin, and whole *under surface* of the neck, the breast, belly, and long axillary feathers, reddish-black. Inner wing coverts white and pale grey. *Tail* white, banded with eight blackish-brown bars, which are nearly obsolete on the lateral feathers. *Bill* and *legs* black.

Form.—*Bill* longer and stronger than that of *Ch. pluvialis*. *Tail* somewhat rounded. Inner toe connected to the middle one by a rudimentary web. Outer web equal to the first phalanx of the outer toe in depth. *Toes* margined by a thick fold of skin. Hind toe very small, armed with a minute nail.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	12	0	Length of bill to rictus	1	6	Length of middle nail	0	2
,, of tail	3	4	,, of naked thigh	1	0	,, of hind toe and nail	0	1¾
,, of wing	7	4	,, of tarsus	1	10	Extent of wing	23	0
,, of bill above	1	2	,, of middle toe	1	0			

* All our specimens have the black under plumage, but want the yellow spots represented in Wilson's figure.

[138.] 1. Strepsilas interpres. (Illiger.) *The Turnstone.*

Genus, Strepsilas, Illiger.
The Turnstone (*Morinellus Canadensis*). Edwards, pl. 141.
Hebridal Sandpiper (*Tringa interpres*). Penn. *Arct. Zool.*, ii., p. 472, No. 382.
Turnstone (*Tringa interpres*). Wils., vii., p. 32, pl. 57, f. 1.
Tourne-pierre à collier (*Strepsilas collaris*). Temm., ii., p. 553.
Strepsilas collaris. Sab. (Capt.) *Suppl. Parry's First Voy.*, p. cc. Sab. (J.) *Frankl. Journ.*, p. 684. Richards. *Append. Parry's Second Voy.*, p. 352. Bonap. *Syn.*, No. 222.
Talligwee-areeoo or Tellee-goo-aieu, Esquimaux. Gehawæshew, Cree Indians.

This common bird reaches its breeding-quarters, on the shores of Hudson's Bay and of the Arctic Sea up to the seventy-fifth parallel, in June, and quits them again in the beginning of September. It halts in October on the shores of the Delaware, but proceeds farther south when the cold weather sets in. Its eggs, according to Mr. Hutchins, are olive-green, spotted with blackish-brown.

DESCRIPTION

Of a specimen, killed, lat. 57°, Hudson's Bay, in September.

Colour.—A large spot on the lores, the upper sincipital band, which is prolonged over the eye, borders the ears, and meets its fellow on the nape, the upper half and sides of the neck, the rump, longest tail coverts, tips of the greater wing coverts, bases of the quills, base and tip of the tail, the chin, belly, under tail coverts, and insides of the wings, white. Crown black, with white borders. The base of the neck above, the back, scapulars, tertiaries, and middle rows of lesser coverts, chestnut-brown, blotched with black. Upper border of the wing, greater coverts, and quills dark clove-brown. Shorter tail coverts, outer half of the tail, lower sincipital band, that passes under the eye and spreads over the cheeks, a stripe from the rictus along the side of the throat, the fore part of the neck, breast, and shoulders, velvet-black. *Bill* black. *Legs* orange.—Form typical.

The *female* nearly resembles the male. The *young* are less brilliantly coloured, and their markings are less distinct.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	10	6	Length of bill above . .	0	11¼	Length of middle toe .	0	10½
,, of tail . .	2	6	,, of bill to rictus .	1	1½	,, of its nail . .	0	3
,, of wing . .	5	10½	,, of tarsus . .	1	0¾	,, of hind toe and nail	0	3½

[139.] 1. Grus Americana. (Temm.) *Whooping Crane.*

Genus, Grus, Pallas.
The Hooping Crane, *from Hudson's Bay.* Edwards, pl. 132.
Ardea Americana. Forst. *Phil. Trans.*, lxii., p. 409, No. 37.
Hooping Crane (*Ardea Americana*). Penn. *Arct. Zool.*, ii., p. 442, No. 339; and *App*, p. 66.
Whooping Crane (*Ardea Americana*). Wils., viii., p. 20, pl. 64, f. 3.
Grus Americana. Temm. *Analyse*, p. c. Bonap. *Syn.*, No. 224.
Wapow oocheechawk. Cree Indians.

This stately bird frequents every part of the fur-countries, though not in such numbers as the Brown Crane. It migrates in flocks, performing its journeys in the night, and at such an altitude, that its passage is known only by the peculiarly shrill screams which it utters. A few pass the winter in the southern parts of the United States; but the greater part go still farther south. It rises with difficulty from the ground, flying low for a time, and affording a fair mark to the sportsman; but, if not entirely disabled by the shot, fights with great determination, and can inflict very severe wounds with its formidable bill. We have known instances of the wounded bird putting the fowler to flight, and fairly driving him off the field. When fat its flesh is well-tasted, though inferior to that of the Brown Crane. Its eggs are nearly as big as those of the Swan, and of a bluish-white colour, with patches of brown. The wing-bone of this bird is converted by the natives into a kind of flute.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May 7, 1827.

Colour, pure white, except the spurious wing, primaries, and seven primary coverts, which are brownish-black: four or five of the secondaries are speckled with brown. Occiput and an angular patch beneath the eye clothed with blackish-blue feathers. *Bill* wax-yellow. *Irides* gamboge-yellow. *Legs* bluish-black.

Form.—*Bill* strong, straight, tapering, slightly compressed, and very acute; edges of both mandibles crenated near the points. Top of the head nearly to the occiput, and the posterior part of the jaws to beneath the eyes, covered with a dull orange-coloured membrane, clothed with black hairs. Circumference of the eye feathered. *Third quill feather* the longest; first, second, and fifth nearly equal to it. Barbs of the tertiaries long, silky, and detached. Thighs and legs thick and strong. Outer and middle toes connected at the base by a web: the hind toe is short.—The orange-coloured membrane is paler in the *female*.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	48	0	Length of bill to rictus	6	0	Length of tarsus	12	0
,, of wing	25	0	,, of bare thigh	6	0	Height on its legs (bill and neck stretched upwards)	62	0
,, of bill above	6	0	,, of feathered thigh	8	0			

[140.] 2. Grus Canadensis. (Temm.) *Brown Crane.*

Genus, Grus, Pallas.
Brown and Ash-coloured Crane. Edwards, pl. 133.
Ardea Canadensis. Forst. *Phil. Trans.*, lxii., p. 409, No. 36.
Brown Crane (*Grus Canadensis*). Penn. *Arct. Zool.*, ii., p. 443, No. 340.
Grus Canadensis. Sab. *Frankl. Journ.*, p. 685. Richards. *Append. Parry's Second Voy.*, p. 353, No. 14. Temm. *Analyse*, p. c. Bonap. *Syn.*, No. 225.
Ochee-chak, Cree Indians. Tattlee-aruök, Esquimaux.

This Crane visits all parts of the fur-countries in summer up to the shores of the Arctic Sea. Its eggs are oil-green, irregularly, but rather thickly spotted with yellowish-brown and umber; the spots confluent and dark on the thick end. Its flesh is good food, resembling that of the Swan (*Cygnus buccinator*) in flavour.

DESCRIPTION

Of a specimen, killed at Great Slave Lake, May 15, 1822.

Colour, yellowish-grey; dorsal plumage glossed with ferruginous; neck above ash-coloured; cheeks and throat brownish-white. Greater quills blackish-brown, their shafts white. All the upper surface of the head before and between the eyes, and the lores, covered with a red skin, pretty thickly clothed with black hairs. *Bill* blackish-brown.

Form.—Under mandible perfectly straight beneath; ridge of the upper mandible sloping to the point; the commissure curving gently downwards at the tip. *Nails* considerably curved, rounded beneath; middle one deeply and acutely grooved exteriorly.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	48	0	Length of bill above .	4	6	Length of tarsus . .	9	6
,, of tail . .	10	0	,, of bill to rictus .	4	3	,, of middle toe . .	3	3
,, of wing .	22	0	,, of naked thigh .	4	6	,, of its nail . .	0	10

Individuals vary considerably in size, particularly in the length of the bill.

[141.] 1. Ardea Herodias. (Linn.) *The Great Heron.*

Genus, Ardea, Linn.
Ash-coloured Heron (*Ardea fusca*). Edw., pl. 135; (from Hudson's Bay.)
Red-shouldered Heron (*Ardea Hudsonias*). Penn. *Arct. Zool.*, ii., p. 444, No. 342.
Great Heron (*Ardea Herodias*). Wils., viii., p. 28, pl. 65, f. 2.
Ardea Herodias. Bonap. *Syn.*, No. 226.

This bird is rarely, and I believe only accidentally seen in the fur-countries. Edwards's figure was taken from an individual brought from Hudson's Bay by

Mr. Isham, which we have, on the authority of Temminck*, considered as a representative of the young of the Great Heron. We have heard of no other specimen having been obtained in that quarter, and can add nothing to Edwards's description.

[142.] 2. ARDEA LENTIGINOSA. (Montague.) *American Bittern.*

GENUS, Ardea, LINN. *Sub-genus*, Butor, TEMM.; Botaurus, BONAP.
Bittern, *from Hudson's Bay*. EDW., pl. 136.
Botaurus Freti Hudsonis. BRISS., v., p. 444, pl. 37, f. 1.
Ardea Stellaris, *varietas*. FORST. *Phil. Trans.*, lxii., p. 410, No. 38.
Bittern. PENN. *Arct. Zool.*, ii., p. 451, No. 357.
Freckled Heron (*Ardea lentiginosa*). MONTAG. *Suppl. Orn. Dict.*, ann. 1813.
American Bittern (*Ardea minor*). WILS., viii., p. 35, pl. 65, f. 3, ann. 1814.
Ardea lentiginosa (*American Bittern*). SAB. *Frankl. Journ.*, p. 683.
Ardea (Botaurus) minor. BONAP. *Syn.*, No. 234.
Mockcohosew. CREE INDIANS.

This is a common bird in the marshes and willow thickets of the interior of the fur-countries up to the fifty-eighth parallel. Its loud booming, exactly resembling that of the common Bittern of Europe, may be heard every summer evening, and also frequently in the day†. When disturbed, it utters a hollow, croaking cry. It lays, according to Mr. Hutchins, four eggs, of a cinereous green colour.

DESCRIPTION

Of a *male*, killed on the Saskatchewan plains, 8 July, 1827.

COLOUR.—Top of the head dusky reddish-brown. Neck pale yellowish-brown, minutely dotted with blackish-brown: a broad black stripe on the side of the neck from behind the ears. *Dorsal plumage* dark umber-brown, barred and spotted with chestnut- and yellowish-browns: long feathers on the shoulders broadly edged with brownish-yellow. Wing coverts brownish-yellow, spotted and barred with umber. Spurious wing, greater quills, their coverts, and the bases of the secondaries, greyish-black; their tips, the lesser quills, and tail brownish-orange, dotted with black. Chin and part of the throat whitish; rest of the *under plumage* ochre-yellow, unspotted on the vent, under tail coverts, and insides of the thighs; marked on the neck, breast, and belly with central stripes of mottled clove-brown; flanks dusky, with light irregular bars; inside of the quills tinged with flesh-colour. *Bill* dark brown above; on the sides and beneath yellow. *Legs* greenish-yellow. *Nails* dark horn-colour.—Another *male*, killed on the 27th of June, has the dorsal plumage and wing coverts mostly of dusky blackish-brown, finely spotted with yellowish-brown, and none of the lively chestnut-brown

* *Manuel*, ii., p. 566.

† Pennant's and Wilson's information on this point is erroneous. (See *Append. Arct. Zool.*, p. 67.) Perhaps its bellowing note is heard only in the breeding season.

markings. Its under plumage is also more of a dull straw colour than bright ochraceous. Its dimensions are equal to the other, but it is probably a younger bird.

Form.—*Bill* straight, tapering, compressed, and finely serrated towards the point; very acute. *Wings* broad and rounded; second and third quills the longest. *Tail* rounded, of ten feathers; also much rounded at the ends*. A short web between the middle and outer toes; inner toe quite free. *Claws* tapering and very acute, rounded beneath; middle one pectinated.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total† . .	31	0	Length of bill to rictus .	4	0	Length of middle toe . .	3	3
,, of tail .	4	6	,, of whole thigh .	5	6	,, of middle claw .	0	10½
,, of wing .	11	6	,, of naked part .	1	6	,, of hind toe . .	1	7
,, of bill above .	3	4	,, of tarsus . .	3	9	,, of its claw . .	1	3

[143.] 1. Recurvirostra Americana. (Linn.) *American Avoset.*

Genus, Recurvirostra, Linn.
American Avoset. Penn. *Arct. Zool.*, ii., p. 502, No. 421, pl. 21. Wils., vii., p. 126, pl. 63, f. 2.‡
Recurvirostra Americana. Bonap. *Syn.*, No. 280.

This singular bird abounds on the Saskatchewan plains, where it frequents shallow lakes, and feeds on insects and small fresh-water crustacea. The crops of those we killed contained fragments of the latter, mixed with gravel. Like the birds of the genus *totanus*, it is noisy, utters cries of distress, and flies towards any one who invades its haunts.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May 7, 1827.

Colour.—Head, neck, and breast reddish-orange, approaching to hyacinth-red. Interior scapulars and wings black. The back§, outer scapulars, tips of the greater coverts, outer margins and inner webs of the secondaries, and all the under plumage posterior to the breast, with the circumference of the eye and region of the bill, white; tertiaries and upper surface of the tail tinged with grey. *Bill* pitch-black. *Legs* greenish-black.

* Wilson says the American Bittern has invariably twelve tail feathers; nine of our specimens have no more than ten; but two of the under coverts are as long as the tail, and would be reckoned by some ornithologists among the *rectrices*.

† Length from the tip of the bill to the breast, the neck stretched out, 19½ inches.
Length of the body, excluding the tail . . . . . 8½ ,,

‡ The figure in *Arctic Zoology* is good, except that the bill appears to have been broken. Wilson's figure, correct as to form, differs from our bird in wanting a white space between the scapulars, and in the white band on the outer scapulars not being continued over the humeral joint. A figure in Griffith's translation of Cuvier, said to be intended for this species, represents the tip of the bill as turned up, the feet almost completely webbed, and the whole of the scapulars black.

§ There is a concealed tuft of blackish-grey feathers at the base of the long tail coverts.

In the *females* the colour of the head and neck is paler, approaching to buff-orange, and the scapulars are browner. Their bills are about a quarter of an inch shorter: other dimensions the same.

Form.—*Bill* long and slender, much depressed, curved upwards, the extreme tip bent down. *Wings* shorter than the even tail; first and second quills longest. No visible lateral scales on the thighs. *Tarsi* compressed, covered with very delicate scales, the lateral ones merely indicated. Anterior toes connected by thick and deeply emarginated webs, which include one phalanx of the inner toe and two of the outer one, but are prolonged as a bordering to the next joint. *Nails* nearly straight. Hind toe very small, and articulated high up.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	18	0	Length of bill above	3	10½	Length of middle nail	0	3½
,, of tail	4	3	,, of naked thigh	2	6	,, of hind toe	0	1
,, of wing	9	0	,, of tarsus	3	9	,, of its nail	0	0¾
,, of bill to rictus	4	1	,, of middle toe	1	7½			

[144.] 1. Numenius longirostris. (Wilson.) *Long-billed Curlew.*

Genus, Numenius, Lath.
Long-billed Curlew (*Numenius longirostra*). Wils., viii., p. 23, pl. 64, f. 4.
Numenius longirostris. Bonap. *Syn.*, No. 242.

A specimen of this Curlew exists in the Hudson's Bay Museum, but the particular district of the fur-countries from whence it was procured has not been noted. I have reason to believe, however, that it frequents the plains of the Saskatchewan and banks of the Columbia.

DESCRIPTION

Of a specimen (No. 25) in the Hudson's Bay Museum.

Colour.—*Upper plumage* dark liver-brown, with marginal marks of wood-brown,—these colours forming transverse bars on the lesser quills, tail coverts, and tail. Primaries blackish-brown, the posterior ones barred with wood-brown, which also forms the ground colour of their inner webs; shaft of the outer one white. *Under plumage*, long axillaries, inner wing coverts, and thighs, buff-yellow; the belly unspotted; the throat and breast striped in the centres with liver-brown. A pale superciliary line, and a dark line on the lores; but no medial stripe on the crown, which is coloured like the fore part of the back. Chin whitish. *Bill* blackish-brown; flesh-coloured at the base beneath. *Legs* lead-grey.

Form.—*Bill* more arched and much longer than that of *N. Hudsonicus*, being even longer than that of *N. arquata*. *Tail* rounded. *Tarsus* scutellated anteriorly with large transverse scales*. *Nail* of the right middle toe deeply crenated or fissured; of the left one entire.

* The tarsus of *N. arquata* is scutellated on its anterior lower half only.

Web between the middle and outer toes five lines and a half deep in the centre; the inner web measures a line less.

DIMENSIONS.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	24	6	Length of naked thigh	1	9	Length of inner toe	1	3
,, of tail	4	9	,, of tarsus	3	$8\frac{1}{2}$	,, of its nail	0	$2\frac{1}{2}$
,, of wing	11	9	,, of middle toe	1	7	,, of hind toe	0	$5\frac{1}{2}$
,, of bill above	6	3	,, of middle nail	0	$4\frac{1}{2}$	,, of its nail	0	2
,, of bill to rictus	6	6						

[145.] 2. NUMENIUS HUDSONICUS. (Lath.) *Hudsonian Curlew.*

GENUS, Numenius, LATH.
Eskimaux Curlew. PENN. *Arct. Zool.*, ii., p. 461, No. 364; (fide Lath.)
Hudsonian Curlew. LATH. *Syn. Suppl.*, vii., p. 243, sp. 11.
Numenius Hudsonicus. IDEM, *Ind.*, ii., p. 712, sp. 7.
Esquimaux Curlew (*Scolopax borealis*). WILS., vii., p. 22, pl. 56, f. 1.*
Numenius Hudsonicus. BONAP. *Syn.*, No. 243.
Waw-kaw-cuttaysew. CREE INDIANS.

This Curlew breeds in the interior of the fur-countries, visiting the marshy shores of Hudson's Bay in the spring and fall. Hearne reports that it resorts in great numbers, on the ebbing of the tide, to low-water mark, to feed on marine insects, retiring to dry ridges at high-water. "It flies," he says, "as steady as a Woodcock, answers to a whistle that resembles its note, is a most excellent shot, and when fat proves to be delicious eating." Mr. Hutchins describes its eggs as being of a tapering form, and of a light bluish-grey colour, with black spots.

DESCRIPTION

Of a specimen, killed on the Saskatchewan plains, May, 1827.

COLOUR.—*Upper plumage* (including the rump and a stripe on the lores) dull liver-brown, with pale brownish-grey marginal spots, that become bars on the lesser quills and tail coverts; crown of the head darker†; five greater quills blackish-brown, and unspotted; shaft of the first one white. *Tail* clove-brown, with nine blackish-brown bars, one of them terminal. Superciliary stripe, sides of the head, the neck, and breast, dull yellowish-grey, with narrow stripes of liver-brown; sides of the breast blotched with the same. Chin, belly, and under tail coverts white, the latter slightly tinged with buff. Flanks, long axillaries, and under

* Wilson's figure represents a bird in brighter plumage than our specimen, with more white on the rump and livelier colours on the tail. His quotation from Pennant relates to *Numenius borealis*, that author having misapplied Mr. Hutchins's notes.

† When the plumage is arranged smoothly, there is no pale medial crown stripe in our specimen; but the concealed borders of some of the feathers are brownish-grey.

wing coverts reddish-buff (much fainter than in *N. borealis*), barred with clove-brown. *Bill* brownish-black. *Legs* blackish-grey.

Form.—*Bill* much stouter, longer, and more curved than that of *N. borealis*, and greatly resembling that of *N. phæopus*. *Wings* nearly equal to the square tail. *Toes*, particularly the hind one, longer than those of *N. borealis*. Middle nail crenated.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	18	6	Length of bill above . .	3	3	Length of middle toe . .	1	3
,, without bill .	16	6	,, of bill to rictus .	3	6	,, of middle nail .	0	$3\frac{1}{2}$
,, of tail . .	4	0	,, of naked thigh .	1	0	,, of hind toe .	0	6
,, of wing . .	9	3	,, of tarsus . .	2	2	,, of its nail . .	0	$2\frac{1}{4}$

[146.] 3. Numenius borealis. (Lath.) *Esquimaux Curlew.*

Genus, Numenius, Lath.
Scolopax borealis (*Eskimaux Curlew*). Forst. *Phil. Trans.*, lxii., pp. 411, 431.
Numenius borealis. Lath. *Ind.*, ii., p. 712, sp. 9*. Bonap. *Syn.*, No. 244.
Weekee-meneesew. Cree Indians.

Plate lxv.

This Curlew frequents the barren lands within the Arctic circle in summer, where it feeds on grubs, fresh-water insects, and the fruit of *Empetrum nigrum*. Its eggs, three or four in number, have a pyriform shape and a siskin-green colour, clouded with a few large irregular spots of bright umber-brown. The Copper Indians believe that this bird and some others betray the approach of strangers to the Esquimaux; and it is very probable that that persecuted people, always in dread of the treacherous attacks of their enemies, and accustomed to observe the few animals that visit their country with great attention, will be on the alert when they perceive a bird flying anxiously backwards and forwards over a particular spot. On the 13th of June, 1822, I discovered one of these Curlews hatching on three eggs on the shore of Point Lake. When I approached the nest, she ran a short distance, crouching close to the ground, and then stopped to observe the fate of the object of her cares.

DESCRIPTION

Of a specimen, killed on the Rocky Mountains.

Colour.—*Upper plumage* blackish-brown, with many yellowish-brown marginal spots; these colours forming handsome bars on the lesser quills and tail coverts. All the primaries

* Many of the synonymes quoted by Latham belong to the preceding species.

NUMENIUS BOREALIS.

London. Printed for John Murray Bookseller to the Admiralty. Jan.y 1.st 1825.

and their coverts are unspotted, the posterior ones edged at the tip with white: shaft of the first quill white. *Tail* broccoli-brown, with nine blackish-brown bars. Chin and both eyelids brownish-white. *Under plumage* wood-brown, the neck and sides of the head thickly striped with liver-brown; breast and flanks marked with arrow-headed spots of the same, which exist on the belly also, though smaller and more scattered. Inner wing coverts pale reddish-orange, irregularly barred with liver-brown. *Bill* brownish-black; flesh-red at the base beneath. *Legs* dark bluish-grey.

Form.—*Bill* comparatively short and very slender, slightly arched; nasal groove extending two-thirds its length. *Wings* much pointed, equal to the square *tail*. *Toes* short and stout, connected by shorter webs than those of *Numenius Hudsonicus*. Middle nail entire. *Hind toe* short; its nail curved inwards.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	14	0	Length of bill above .	2	3	Length of middle nail .	0	3½
,, excluding bill .	12	0	,, of bill to rictus .	2	7½	,, of hind toe . .	0	3½
,, of tail . .	3	9	,, of tarsus . .	1	10	,, of hind nail .	0	1½
,, of wing . .	8	9	,, of middle toe .	1	0	Extent of wing . .	28	0

[147.] 1. Tringa Douglasii. (Swainson.) *Douglas's Sandpiper.*

Genus, Tringa, Briss.

Ch. Sp. Tringa Douglasii, *pedibus semipalmatis, rostro tarsisque elongatis, caudâ leviter trifurcillatâ; rectricibus mediis ferrugineo fasciatis, auricularibus castaneis, uropygio albo nigro fasciato.*

Sp. Ch. Douglas's Sandpiper, fore toes connected by short webs; bill and tarsi long, the former dilated at the point; tail slightly doubly-notched; ear feathers chestnut-coloured; rump banded with black and white, and the middle tail feathers with ferruginous.

Plate lxvi.

This species is not uncommon in the fur-countries up to the sixtieth parallel, and perhaps still farther north. It has the usual habits of the genus, frequents the interior in the breeding season, and resorts to the flat shores of Hudson's Bay in the autumn, previous to taking its departure for the south. We have not had an opportunity of comparing it with an authenticated example of the *Tr. himantopus* of the Prince of Musignano; but the latter is described as a smaller bird, with rather longer thighs and legs, an even grey tail, the central pair of feathers alone longer than the others and not banded with ferruginous; no mention is made of the colour of the ear feathers.

DESCRIPTION

Of a specimen, killed on the Saskatchewan, in June, 1827.

Colour.—Top of the head, the scapulars, interscapulars, and tertiaries, blackish-brown,

edged round the tips with brownish-white and ferruginous. Wing coverts and lesser quills hair-brown; the latter, together with their greater coverts, slightly edged with white. Greater quills blackish-brown; shafts of the first one and of the secondaries brownish-white. Neck, rump, tail coverts, and whole *under plumage*, brownish-white; the chin, sides of the head and neck marked with central spots or streaks of liver-brown, largest on the back of the neck; the rump, tail coverts, and under plumage of the body barred with the same, most strongly on the flanks, and most imperfectly on the middle of the belly, which has also less of the brown tinge. Chestnut-coloured bands on the lores, above the eye, and on the ears. Central pair of *tail feathers* blackish-brown, striped, tipped, and barred with ferruginous; lateral tail feathers broccoli-brown, striped on the shafts and inner webs with white. *Bill* black.

Form.—*Bill* rather long, slender, moderately high at the base, very slightly arched towards the point, which is depressed, conspicuously dilated, and minutely pitted when dry. *Tail* as long as the wings, very slightly doubly-forked, and consisting of twelve feathers. *Legs* and toes slender. Fore toes connected by webs; the inner web, which is smallest, is half the length of the first phalanx of the inner toe.

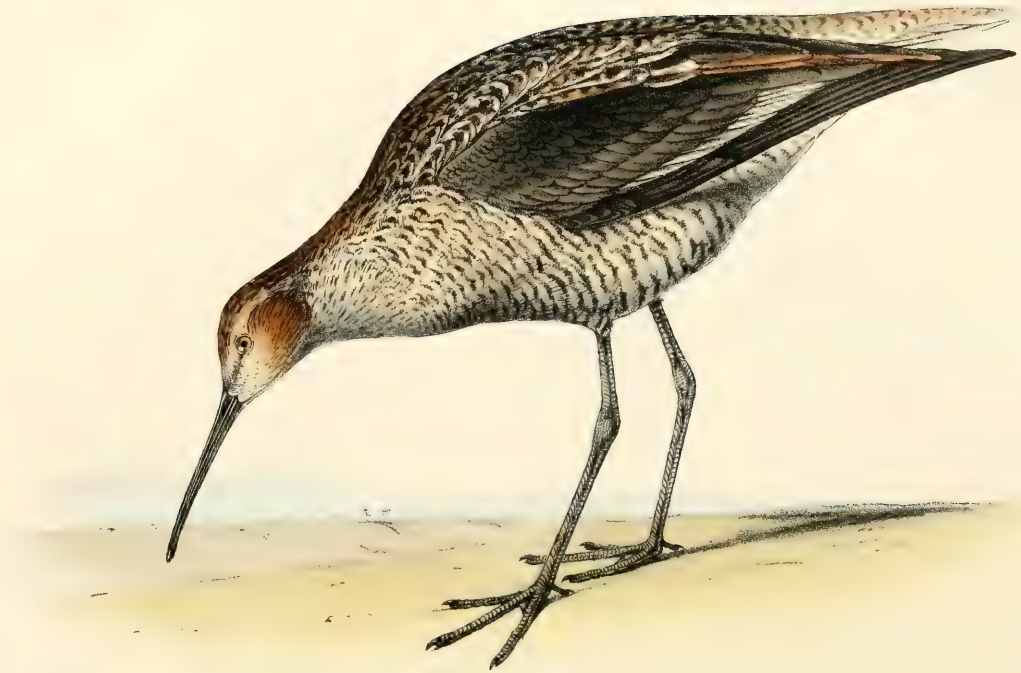
Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	10	3	Length of bill to rictus .	1	7½	Length of middle nail .	0	2
,, of tail . .	2	6	,, of tarsus . .	1	7½	,, of inner web .	0	2
,, of wing . .	5	1½	,, of naked thigh .	1	1	,, of outer web . .	0	3½
,, of bill above .	1	7½	,, of middle toe . .	0	10	,, of hind toe and nail	0	3¼

[148.] 2. Tringa himantopus. (Bonap. ?) *Slender-shanks Sandpiper.*

Genus, Tringa, Briss.
Tringa (Hemipalama) himantopus. Bonap. *Ann. Lyc. New York*, ii., p. 157? *Syn.*, No. 245?

In 1822 we killed several specimens of a Sandpiper, on the flats at the mouth of Hayes River, from which, when recent, the subjoined description was taken. Specimens were brought home in spirits; but, probably from being too much injured, were not noticed by Mr. Sabine with the other birds, in the Appendix to Sir John Franklin's narrative of his first Journey. It differs from *Tr. Douglasii* in the length of its legs, and in the tail-coverts and under-plumage not being barred with liver-brown, nor the central tail-feathers barred and striped with ferruginous. The Prince of Musignano does not describe the under-plumage of *Tr. himantopus*, but his short characters agree well with our bird, excepting the tail coverts. A comparison of specimens, however, is required to ascertain the identity of our bird with *Tr. himantopus*, also to establish *Tr. Douglasii* as a distinct species.



TRINGA DOUGLASSII.

London Printed for John Murray, Bookseller to the Admiralty, Jan.ʸ 1.ˢᵗ 1834.

DESCRIPTION

Of a specimen killed at Hudson's Bay, lat. 57°, July 29, 1822.

Colour.—Top of the head, dorsal plumage, and lesser wing-coverts black edged with reddish-brown and brownish-white. Neck, grey. Quills and central tail-feathers, clove-brown; lateral tail-feathers, light hair-brown; shafts of the primaries, edges of the secondaries, and of the lateral tail-feathers, and stripes on the shafts of the latter, whitish. Tail-coverts, greyish-white, with a few brown spots. Breast, brownish-grey; belly, brownish-white. Inner wing coverts, smoke-grey and white. *Bill* blackish; *Legs* wax-yellow.

Form.—*Bill* much compressed at the base; its ridge rounded for two-thirds of its length, when it is depressed or flattened, its width being slightly increased close to the point. Nasal grooves two-thirds of the length of the bill. The ends of both mandibles, when recent, are closely studded with minute, smooth, soft, flattened tubercles, like polished shagreen. Central tail feathers exceeding the others a little in length. Lateral toes equal. Middle toe connected to the lateral ones by webs which include its first phalanx; little difference in the size of the outer and inner webs.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	9	6	Length of hind toe and nail	0	4	Length of thigh, tarsus, and		
„ of bill . .	1	8	Extent of wing . .	17	0	toes* . . .	5	6

[149.] 3. Tringa semipalmata. (Wilson.) *Semipalmated Sandpiper.*

Genus, Tringa, Briss.
Semipalmated Sandpiper (*Tringa semipalmata*), Wilson, vii., p. 131, pl. 63, f. 4.
Tringa semipalmata. Bonap. *Syn.*, No. 246.
Chækis-coo-awscesh, Cree Indians.

This bird was first published to the world by Wilson; but in Mr. Hutchins's MSS. I find an accurate description of it, written about the year 1770. He says, it arrives at Severn river about the middle of May in large flocks, builds a nest early in June of withered grass, and lays four or five black and white spotted eggs. Towards the autumn it has a chirruping note, and in September it retires to the southward.

DESCRIPTION

From Mr. Hutchins's MSS.

"Forehead, a streak over the eyes, and the sides of the neck grey; ears russet coloured; lores dusky. Top of the head and scapulars black, with pale edges and tips; back of the neck iron-grey; rump and tail coverts black. *Wings* dark-brown, the greater coverts tipped with white, and some of the quills edged externally with the same. Middle tail feathers

* These parts in *Tr. Douglasii* measure fully an inch less.

dark; lateral ones pale. *Under plumage* white; breast and front of the neck streaked with black. *Bill* and *legs* black. Wings and tail of the same length. The web between the outer and middle toe reaches to the joint; that which connects the middle and inner toes does not come so far. Total *length*, $5\frac{1}{2}$ inches; *extent* of wing, 10 inches; *weight*, 14 drachms avoird.; length of bill $\frac{3}{4}$ of an inch *."

[150.] 4. TRINGA MARITIMA. (Brunnich.) *Purple Sandpiper.*

GENUS, Tringa, BRISS.
Beccasseau violet (*Tringa maritima*), TEMM. ii., p. 619.
Tringa maritima (*Purple Sandpiper*), SAB. *Greenl. Birds*, p. 532; *Suppl. Parry's First Voy.*, p. cci. RICHARDSON, *Parry's Second Voy.*, p. 354. BONAP., *Syn.*, No. 252.
Siggee-aree-areeoo, ESQUIMAUX.

This bird breeds abundantly on Melville Peninsula and the shores of Hudson's Bay. Its eggs are pyriform, $16\frac{1}{2}$ lines long, and an inch across at their greatest breadth. Their colour is yellowish-grey, interspersed with small irregular spots of pale hair-brown, crowded at the obtuse end, and rare at the other.

DESCRIPTION

Of a *male*, killed before moulting, July 29, 1822, at Hudson's Bay.

COLOUR.—*Upper plumage* mostly purplish black, bordered with ferruginous on the top of the head and scapulars; the latter tipped with brownish-white; lateral tail feathers pale, brownish-grey; their shafts, narrow edgings, and the broad borders of the lateral pair of tail coverts, white. *Wings* clove-brown; the coverts fringed with grey; the quills, after the fifth, more and more broadly edged with white, the posterior lesser ones being almost entirely white, as are also all the quill shafts. Neck, above and below, greyish; belly and under tail coverts white, all more or less broadly striped in the centres with blackish-brown. Breast and flanks blackish-brown, broadly barred on the tips with greyish-white. *Bill* blackish, tinged with yellow at the base. *Legs* yellowish.—*Young birds* have the dorsal plumage edged with white, which changes, as the season advances, to reddish.

FORM.—*Bill* longer than the head; ridge straight, narrow, and slightly wider at the tip; outline of the lower mandible sinuated near the point, giving a slight appearance of curvature to the bill. *Wings* as long as the moderately rounded tail. *Thighs* feathered low down. *Tarsi* stout; toes bordered by a thick fold of skin.

* Wilson states his bird to be six inches long and twelve in extent of wing, with a bill an inch long, and very slightly bent; but he adds, that individuals varied greatly in size, some being scarcely five inches and a half in length, while others measured seven, and had bills upwards of an inch long.

DIMENSIONS

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	8	0	Length of bill to rictus .	1	1½	Length of middle nail . .	0	2
,, of tail . .	2	3	,, of tarsus . . .	0	10	,, of hind toe and nail	0	1¾
,, of wing . .	4	9	,, of middle toe .	0	10¾	Extent of wing . .	17	0
,, of bill, above .	1	2						

The *female* is a little larger, and her bill, on an average, measures a quarter of an inch more than that of the male.

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[151] 5. TRINGA ALPINA. (Pennant.) *The American Dunlin.*

GENUS, Tringa. BRISS.
Dunlin (*Tringa alpina*), PENN., *Arct. Zool.*, ii., p. 476, No. 391. Summer.
Purre (*Tringa cinclus*), IDEM, p. 475, No. 390. Winter.
Red-backed Sandpiper (*Tringa alpina*), WILSON, vii. p. 25, pl. 56, f. 2.
The Purre (*Tringa cinclus*), IDEM, pl. 57, f. 3.
Becasseau brunnette *ou* variable (*Tringa variabilis*), TEMM., ii., p. 612 ?
Tringa variabilis (*Dunlin*), SAB., *Suppl. Parry's First Voy.*, p. cc. SAB. (J.), *Frankl. Journ.*, p. 686. RICHARDSON, *Append. Parry's Second Voy.*, p. 353.
Tringa alpina, BONAP., *Cat.*, No. 248.
Seekee-araksioo. ESQUIMAUX.

This bird, which breeds plentifully on the Arctic coasts of America, was killed by us on the Saskatchewan plain in its passage northwards, and in autumn on the shores of Hudson's Bay. Its eggs are oil-green, marked with irregular spots of liver-brown, of different sizes and shades, confluent at the obtuse end. They are 15½ lines long, and 11½ across where broadest, the ends differing greatly in size.

DESCRIPTION

Of a specimen killed on the Saskatchewan.

COLOUR.—Ground of the *upper plumage*, front of the neck and sides of the breast dark liver-brown, with narrow lateral borders of greyish-brown on the head and neck; broader tips and lateral blotches of yellowish-brown and ferruginous on the scapulars and back; and broad grey borders on the lower part of the neck and sides of the breast. *Rump* and *tail coverts* pitch black, very slightly fringed with ferruginous. Central pair of *tail feathers* blackish-brown; lateral ones pale broccoli-brown or brownish-grey, all with narrow whitish edgings. *Wings* hair-brown; centres of the lesser coverts, the greater coverts, and quills, blackish-brown; lesser quills and greater coverts narrowly tipped with white; greater quills fringed towards the base with the same, and the shaft of the outer primary, and of several of the posterior ones, white. *Belly*, flanks, under tail coverts, inner wing coverts, and thigh feathers, pure white. *Bill* and *legs* black.

Form.—*Size*, greater than the English Dunlin. *Bill*, when compared with that of the latter, considerably shorter, more nearly straight, less deep at the base, and altogether weaker; the under mandible in particular being considerably more slender. The ridge of the upper mandible, close to the tip, is likewise more rounded, and not appearing as if pared down. The lateral tail feathers are broader than those of the English bird; the form of the tail, however, is the same in both, namely, very slightly doubly emarginate, independent of the central pair of feathers, which are acute, and two lines longer than any of the others. *Wings* a little shorter than the tail. *Toes* quite free; hind one articulated near the sole. Nails slender, acute, and considerably curved; hind one turning inwards.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	8	3	Length of bill to rictus	0	11	Length of middle nail	0	2½
,, of tail	2	4½	,, of naked thigh	0	6	,, of inner toe	0	6½
,, of wing	4	9	,, of tarsus	0	11	,, of inner nail	0	2
,, of bill above	0	11	,, of middle toe	0	8	,, of hind toe and nail	0	3

[152.] 6. Tringa Schinzii. (Brehm.) *Shinz's Sandpiper.*

Genus, Tringa, Briss.
Pelidna cinclus, var. Say, *Long's Exped.*, i., p. 337.
Tringa Schinzii, Bonap. *Syn.*, No. 249.

This species is not unfrequent on the shores of the small lakes which skirt the Saskatchewan plains.

DESCRIPTION
Of a *male*, killed on the Saskatchewan, June, 1827.

Colour.—Centres of the *upper plumage* blackish-brown; edges rust-coloured on the shoulders and scapulars; grey on the neck, posterior part of the back, and rump: the pale edges of the neck broadest. Lateral *tail coverts* white, marked near the tip with clove-brown; central-pair blackish-brown, tipped with white. *Tail-feathers* broccoli-brown, edged all round with white, the central pair blackish-brown with narrower edgings. *Wings* blackish-brown; margins of the lesser coverts paler; outer borders of the quills, middles of their shafts, and tips of the secondaries and greater coverts white. Region of the bill, a streak on the lores, and the ear feathers, brownish. *Under plumage* white; the sides of the head, throat, breast, and flanks spotted with blackish-brown. *Bill* dark-brown; paler at the base beneath. *Legs* brown.

Form.—*Bill* shorter than the head, straight, the tip depressed and slightly drooping, grooved to near the point, which is obsoletely pitted when dry. *Tail* doubly emarginate; outer feather and that next the central pair equal in length; all the feathers nearly of the

same breadth; central pair rather acute, and longer than the others, which are rounded. A very slight rudiment of a *web* between the middle and outer toes. *Hind-toe* short and slender, with a very small nail.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	7	6	Length of bill to rictus .	0	11¼	Length of middle toe .	0	8¼
,, of tail . .	2	6	,, of tarsus .	0	10½	,, of its nail . .	0	2¼
,, of wing . .	4	6	,, of naked thigh .	0	7	,, of hind toe and tail	0	2½
,, of bill above .	0	10½						

[153.] **7. Tringa minuta.** (Leisler.) *Pigmy Sandpiper.*

Genus, Tringa, Briss.
" Tringa minuta. Leisler, *Nachtr. Zu. Bechst. Naturg. Deut. Heft.*, i., p. 74."
Beccasseau échasses (*Tringa minuta*). Temm., ii., p. 624.
Tringa minuta. Sab. *Frankl. Journ.*, p. 686. Bonap. *Syn.*, No. 254.

This species was seen abundantly in the autumn, feeding, during the recess of the tide, on the extensive flats at the mouth of Nelson's and Hayes rivers.

DESCRIPTION

Of a specimen from Hudson's Bay, in the British Museum.

Colour.—*Upper plumage* dull hair-brown, blackish on the shafts. Quills of the wings, rump, tail coverts, and middle pair of tail feathers, blackish-brown; lateral tail feathers broccoli-brown, their shafts, those of the greater quills, the tip edgings of the lesser quills, the two lateral tail coverts, and the *under plumage*, white. Superciliary stripe, front of the neck and breast, greyish-white; the cheeks and sides of the breast striped on the shafts with brown. *Bill* and *legs* brownish-black.

Form.—*Bill* straight, shorter than the head. *Wings* equal to the tail, which is very slightly doubly-forked. Outer and middle toes connected by a very short web.

A specimen, killed, *on the 21st of July*, at the mouth of Hayes River, had the upper plumage in general brownish-black, narrowly bordered with reddish-brown, in some places almost white. The secondaries and their coverts slightly tipped with white; the lateral tail feathers edged with the same; and the fore part of the neck striped on the shafts with dark brown. *Legs* wax-yellow.

Dimensions

Of a specimen in the British Museum.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	6	0	Length of bill . .	0	8½	Length of middle toe .	0	7
,, of tail . .	1	11	,, of tarsus . .	0	10	,, of its nail . .	0	1½
,, of wing . .	4	0	,, of naked thigh .	0	4½	,, of hind toe and nail	0	1½

[154.] 8. Tringa pusilla. (Wilson.) *Diminutive Sandpiper.*

Genus, Tringa, Briss.
Little Sandpiper (*Tringa pusilla*). Wils., v., p. 32, pl. 37, f. 4.
Tringa pusilla. Bonap. *Syn.*, No. 255.

This little bird breeds within the Arctic circle, arriving as soon as the snow melts. It was observed, on the 21st of May, on the swampy borders of small lakes in latitude 66°. It is rather shy, has a sudden, desultory flight, and a single low, shrill note. The crops of those we killed were filled with a soft blackish earth, and some small white worms.

DESCRIPTION

Of a specimen, killed at Great Bear Lake, May 24, 1826.

Colour.—Top of the head, base of the neck, scapulars, interscapulars, tertiaries, and lower rows of wing coverts, dark liver-brown, bordered with chestnut and pale yellowish-brown. *Neck* soiled brown, with central dark spots. Posterior part of the back, middle tail coverts, and central pair of tail feathers, blackish-brown, the latter edged with wood-brown. Sides of the rump tipped with white; lateral tail coverts white, blotched with black; lateral tail feathers very pale broccoli-brown, faintly fringed near the tip with white. *Wings* clove-brown; the primary coverts, posterior primaries, and secondaries tipped and edged with white, particularly the latter; shafts of the second and third quills pale umber-brown, of the others brownish-white. A dark line on the lores; chin and superciliary streak white, with dots. Middle of the breast, the belly, flanks, under tail coverts, inner wing coverts, and thighs, pure white: sides of the breast clouded with dark broccoli-brown. *Bill* blackish. *Legs* dark-brown.

Form.—*Bill* short, straight, the tip depressed; nasal grooves terminating two lines from the tip. *Wings* nearly equal to the tail. Exterior *tail feathers* a quarter of an inch shorter than the central pair, lateral ones nearly even, three central pairs graduated. *Toes* free.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	7	6	Length of bill above .	0	7½	Length of middle toe .	0	7½
,, of tail . .	1	9	,, of bill to rictus .	0	7	,, of middle nail .	0	2
,, of wing . .	3	5	,, of tarsus . .	0	8	,, of hind toe and nail	0	2

[155.] 9. Tringa cinerea. (Linn.) *The Knot.*

The Knot (*Avis canuti*). Edw., pl. 276; winter.
Tringa canuta, islandica, cinerea, australis, nævia, grisea. Gmel. *Syst.*
Red Sandpiper (*Tringa islandica*). Penn. *Arct. Zool.*, ii., p. 476, No. 392.
Ash-coloured Sandpiper (*Tringa cinerea*). Idem, No. 386. Wils., vii., p. 36, pl. 57, f. 2.*
Red-breasted Sandpiper (*Tringa rufa*). Wils., vii., p. 43, pl. 57, f. 5.
Becasseau canut ou Maubeche (*Tringa cinerea*). Temm., ii., p. 627.
Tringa cinerea. Sab. *Greenl. Birds*, p. 533; *Suppl. Parry's First Voy.*, p. cci. Richards. *Append. Parry's Second Voy.*, p. 355.
Tringa islandica. Bonap. *Syn.*, No. 256.

The Knot breeds on Melville Peninsula and in other parts of Arctic America, and also in Hudson's Bay, down to the fifty-fifth parallel. It lays four eggs on a tuft of withered grass . they are, according to Mr. Hutchins, of a dun colour, fully marked with reddish spots.

DESCRIPTION

Of a specimen, killed on Melville Peninsula, in July, 1821.

Colour.—Head and neck above and scapulars blackish-brown, edged on the tips with greyish-white, and blotched laterally with reddish-orange. Rump clove-brown, edged with grey. Tail coverts banded with greyish-white and blackish-brown. Greater quills blackish-brown; rest of the *wings* and tail broccoli-brown; lesser coverts fringed with greyish-white, their shafts blackish†; borders of the middle pair of tail feathers darker, their extreme edges, like those of the lateral feathers, fringed with grey: all the shafts of the quills and tail white. Superciliary stripe and *under plumage* reddish-orange, the sides of the neck and breast having blackish-brown centres; vent and tail coverts brownish-white, with a few scattered blackish marks.

Form.—*Bill* somewhat longer than the head, straight, rather stout; its ridge depressed or flattened before the nostrils, and its width very slightly increased. *Tail* equal to the wings, square, or having a tendency to be doubly notched. *Toes* quite free.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	9	6	Length of bill above .	1	3	Length of middle toe .	0	10
,, of tail . .	3	0	,, of bill to rictus .	1	4½	,, of middle nail .	0	2
,, of wing . .	6	6	,, of tarsus . .	1	2	,, of hind toe and nail	0	2

* M. Temminck quotes this figure as "*ne différant en rien des jeunes Maubeches tués en Europe*;" but the form of its bill is very different from that of the Red-breasted Sandpiper on the same plate, also referred to by him as a representation of the same bird in its summer dress. The bill of the Red-breasted Sandpiper is dilated at the point, thus agreeing with one of the specific characters of *T. cinerea*, Temm. The Southern Sandpiper (*T. australis*), which Latham, in his *Synopsis* and *Supplement*, states to be found in Cayenne and Hudson's Bay, is quoted by authors as a synonyme of *Tr. cinerea*, but evidently improperly. The description of the plumage is so general, that it will apply to several species; but the dimensions of the Cayenne bird (eleven inches total length) are much greater than those of *Tringa cinerea*.

† One or two of the intermediate coverts in this specimen are coloured with reddish-orange blotches like the scapulars, showing that the bird was moulting when killed.

[156.] 1. Totanus semipalmatus. (Temm.) *Semipalmated Tatler.*

Genus, Totanus, Bechst.
Semipalmated Snipe. Penn. *Arct. Zool.*, ii., No. 380, pl. 20, f. 2. Wils., vii., pl. 56, f. 3.
Chevalier semi-palmé (*Totanus semipalmatus.*) Temm., ii., p. 637.
Totanus (Cataptrophorus) semipalmatus. Bonap. *Syn.*, No. 259.

Plate lxvii.

This bird, which breeds abundantly in the United States, was observed by us in considerable numbers on the shores of some small saline lakes near the Saskatchewan. It does not, perhaps, range farther north in summer than the fifty-sixth parallel.

DESCRIPTION

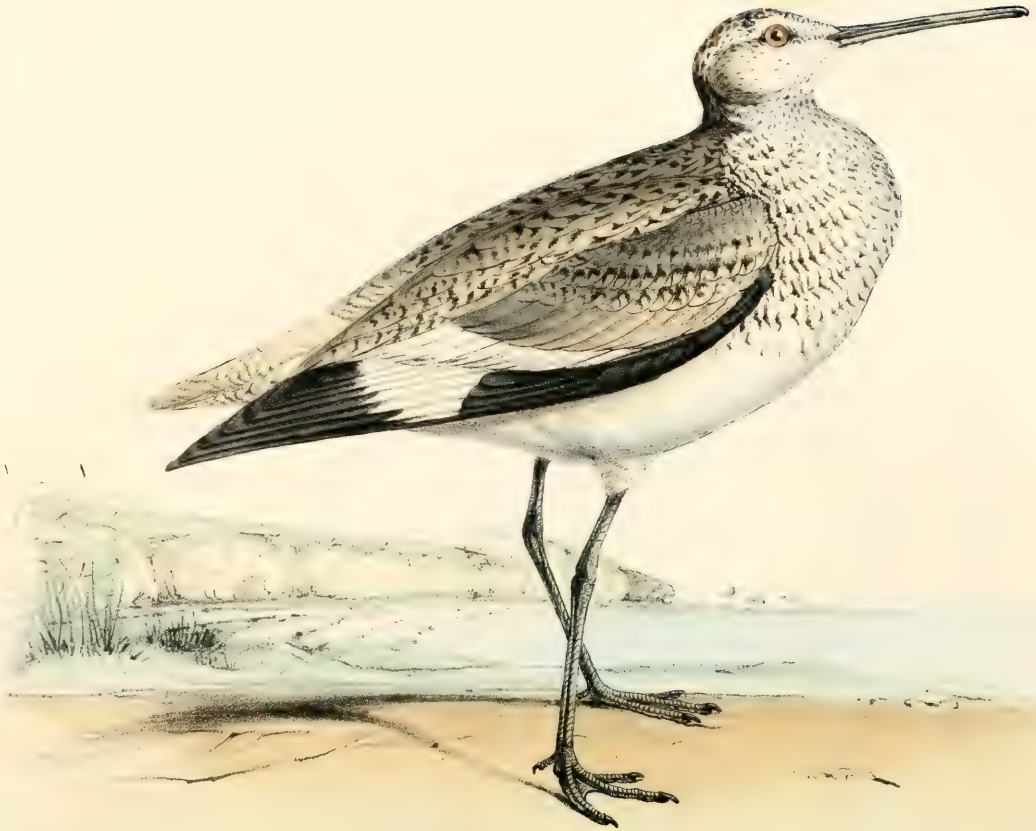
Of a *male*, killed, 21st June, on the Saskatchewan plains.

Colour.—*Upper plumage* brownish-grey, approaching to broccoli-brown, striped faintly on the neck, more conspicuously marked on the head and between the shoulders, and irregularly barred on the scapulars, tertiaries, and their coverts, with blackish-brown. *Tail coverts* white. *Tail* whitish, thickly mottled with pale greyish-brown, that colour forming the ground of the central feathers. Spurious wing, primary coverts, outer halves of the primaries, the axillary feathers, and under wing coverts, blackish-brown: basal halves of all the primaries and the upper row of under wing coverts white, the posterior primaries tipped with the same; secondaries and the outer webs of their greater coverts white, marbled with brown. A spotted liver-brown streak on the lores, bounded above by a spotted white one. Eyelids, chin, belly, and vent, white; rest of the *under plumage* brownish-white, streaked on the throat and transversely barred on the breast, shoulders, flanks, and under tail coverts, with clove-brown; the bars pointed in the middle.—*Female* coloured like the male.

Form.—*Bill* strong, straight, nearly cylindrical from the nostrils; tip of the upper mandible bent down. *Nasal groove* deep, abrupt, half the length of the bill. *Wings* rather longer than the square *tail*. *Toes* moderately long and rather stout, the anterior ones connected by webs, of which the outer one is longest.—The *female* is an inch longer, but resembles the male in its plumage.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	15	6	Length of bill to rictus	2	6½	Length of middle nail	0	3
,, of tail	4	0	,, of tarsus	2	7	,, of hind toe	0	4
,, of wing	8	3	,, of naked thigh	1	3	,, of its nail	0	1½
,, of bill above	2	5	,, of middle toe	1	3¼			



TOTANUS SEMIPALMATUS.

London: Printed for John Murray Bookseller to the Admiralty January 1st 1831.

[157.] **2. Totanus vociferus.** (Sabine.) *The Tell-tale.*

Genus, Totanus, Bechst.
Scolopax totanus. Forst. *Phil. Trans.*, lxii., p. 410, No. 39.
Spotted Snipe. Penn. *Arct. Zool.*, ii., p. 467, No. 374.*
Tell-tale Godwit or Snipe (*Scolopax vociferus*). Wils., vii., p. 57, pl. 58, f. 5.
Totanus vociferus. Sab. *Frankl. Journ.*, p. 687.
Totanus melanoleucus. Bonap. *Syn.*, No. 260.
Sasashew. Cree Indians.

This Tatler is larger than the Yellow-shanks, and has a much stronger bill; but very closely resembles it both in appearance and manners†. It is very plentiful on the Saskatchewan plains. According to Mr. Hutchins, "it lays four eggs, of a dark colour, spotted with black, which are large for the size of the bird."

DESCRIPTION

Of the *male*, killed on the Saskatchewan, May, 1827.

Colour.—*Upper plumage* dark liver-brown, bordered with greyish-white on the head, neck, rump, and two upper rows of lesser wing coverts; the fore part of the back, scapulars, lesser quills, intermediate and greater coverts, being marked with rather large marginal whitish spots. *Greater quills* and their coverts blackish; shaft of the first quill white. *Tail* barred alternately with broccoli-brown and white, the former predominating on the middle feathers, the white on the lateral ones. Upper and under tail coverts, sides of the rump, and *under plumage*, white; the neck streaked with liver-brown; flanks, under wing and tail coverts, barred with the same; the bars on the latter nearly obsolete in some specimens. *Bill* pitch-black. *Legs* wax-yellow.

Form, in almost every respect, the same with that of *Tot. flavipes*, allowance being made for its greater size. *Nasal grooves* not reaching half the length of the bill. *Bill* equal to the tarsus in length.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	14	0	Length of bill above .	2	2	Length of middle toe .	1	5
,, of tail . .	4	0	,, of bill to rictus .	2	6	,, of its nail . .	0	2½
,, of wing . .	7	6	,, of tarsus . .	2	8	,, of hind toe . .	0	4
						,, of its nail . .	0	1½

* Wilson quotes the Stone Curlew, Penn., No. 376 (*Scolopax melanoleuca*, Gmel. and Lath.), as a synonyme of the Tell-tale; but the description in *Arctic Zoology* is too general for identification. On the other hand, the description of the Spotted Snipe in that work agrees with our *T. vociferus*; and its locality and Indian name of *Sasashew* are further proofs of the correctness of our reference. Temminck, indeed, is of a different opinion, and considers Pennant's Spotted Snipe to be the young of his *T. fuscus*. No specimen of the latter bird, however, has, as far as our knowledge extends, ever been found in the fur-countries; nor does it enter into the Prince of Musignano's list of the birds of the United States.

† They are styled the Greater and Lesser Tell-tales in the United States, and Greater and Lesser Yellow-shanks by the Indians.

[158.] 3. Totanus flavipes. (Vieillot.) *Yellow-shanks Tatler.*

Genus, Totanus, Bechstein.
Yellow-shanks Snipe. Penn., *Arct. Zool.*, ii., p. 468, No. 378. Wilson, vii., p. 55, pl. 58, f. 4.
Totanus flavipes (*Yellow-legged Godwit*), Sab. *Frank. Journ.*, p. 688. Bonap. *Syn.*, No. 261.
Sassasees, Cree Indians. Lesser Tell-tale, United States.

This is a very common bird in the fur-countries, and is seen either solitary or in pairs on the banks of every river, lake, and marsh, up to the northern extremity of the continent. It is very impatient of any intrusion on its haunts, and often betrays the approach of the sportsman to the less vigilant of the feathered tribes, by flying round his head, its legs hanging down, and wings drooping, and uttering its incessant though plaintive cries. Previous to its retreating southwards, on the approach of winter, it collects in small flocks, and halts for a time on the shores of Hudson's Bay.

DESCRIPTION

Of a *male* killed at Fort Franklin, May 16, 1826.

Colour.—Top of the head and neck blackish-brown, edged with greyish-white. Fore part of the back, scapulars, greater coverts, and tertiaries, blotched and barred with blackish-brown, and marked with marginal triangular spots of brownish-white. Posterior part of the back, lesser coverts, and secondaries, clove-brown, narrowly edged round with white. *Greater quills* blackish-brown; the shaft of the first one white. Two central pairs of *tail feathers* broccoli-brown; the lateral ones and the coverts white, all barred with blackish-brown; less distinctly on the coverts. Eye stripe, chin, and *under plumage*, white, streaked on the neck and barred on the sides of the breast and belly with blackish-brown. *Bill* black. *Legs* yellow.

Form.—*Bill* moderately long, straight; upper mandible grooved half its length, its acute tip turning down. *Wings* a little longer than the tail. *Tarsus* longer than the bill. Fore toes connected by small *webs*; the inner web half the size of the exterior one.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	9	8	Length of bill to rictus	1	5	Length of middle nail	0	2
,, of tail	2	9	,, of tarsus	2	0	,, of hind toe	0	3½
,, of wing	5	11	,, of middle toe	1	1¼	,, of its nail	0	1
,, of bill above	1	4						

The *female* is larger in all its dimensions, being 1½ inch longer. The plumage is alike in both sexes.

[159.] 4. Totanus calidris. (Bechstein.) *The Redshank* or *Gambet.*

Genus, Totanus, Bechstein.
Chevalier Gambette (*Totanus calidris*). Temm., ii., p. 643.

A specimen of this bird, from Hudson's Bay, exists in the British Museum*.

Description.

Colour.—Top of the head, top and sides of the neck, fore part of the back, sides of the breast, the wing coverts, and tertiaries, dark hair-brown, the shafts blackish. Posterior part of the back, the rump, tail coverts, tail, secondaries, and the *under plumage*, white. The upper tail coverts, tail, and greater wing coverts, barred with blackish-brown; bases of the secondaries mottled with the same; and the shafts of the neck, breast, and flanks, also dark. Greater quills pitch-black; shaft of the first one white, and the ends of some of the posterior ones mottled with white.

Form.—*Bill* straight; nasal grooves exactly half its length. *Wings* rather shorter than the rounded tail. *Thighs* naked for an inch. A short web between the inner and middle toes. Outer web rather more than a quarter of an inch deep.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	11	0	Length of bill above . .	1	7¾	Length of middle toe .	1	0¾
,, of tail . .	3	3	,, of bill to rictus .	1	9¼	,, of middle nail .	0	1¾
,, of wing . .	6	4	,, of tarsus . .	2	0	,, of hind toe and tail	0	3½

[160.] 5. Totanus Bartramius. (Temm.) *Bartram's Tatler.*

Genus, Totanus, Bechst.
" Tringa longicauda. Bechst. *Voy. Nachtr.*" *Fide* Temm.
Bartram's Sandpiper (*Tringa Bartramii*). Wils., vii., p. 63, pl. 59, f. 2.
Chevalier à longue queue (*Totanus Bartramius*). Temm., ii., p. 650.
Totanus Bartramius. Bonap. *Cat.*, No. 256.

This bird was seen by us only on the plains of the Saskatchewan. It feeds on coleopterous insects.

* The "White Redshank" (*Totanus candidus*, Briss.), from Hudson's Bay, figured by Edwards, pl. 139, is considered by him to be an albino variety of *T. calidris*. The dimensions of its bill and wings are, however, greater than those of the latter, and do not accord with those of any of the other *Totani* described in this work: whilst its semipalmated feet rank it with *T. semipalmatus*, which is a larger bird. The following is Edwards's description: "The bill is above two inches long; the wing, when closed, near seven inches. The bill is black at the point, all the rest of it being orange-coloured. The *plumage* is all white, except a little transverse mixture of pale brown or dirty white on the back, wings, and tail; the greater quills are of a darker shade of white than the other wing feathers; the inner coverts have some faint spots; the legs and *feet* are of a bright reddish-orange colour; the legs are bare above the knees; the three forward toes seem to be all webbed together as far as the first joint." He goes on to say: "From its shape, size, proportions, and its faint marks, I am confident it can be no other than our Poolsnipe or Redshank."

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May, 1827.

Colour.—*Upper plumage* mostly blackish-brown and wood-brown, the latter being marginal. On the head and fore part of the back the wood-brown edgings are narrower; but on the nape and wing coverts that colour predominates, the dark brown forming bars on the latter, and also on the tertiaries, scapulars, and lateral tail coverts. The spurious wings, greater quills, and their coverts, are blackish-brown: the shaft of the first primary white; two or three of the posterior primaries and the secondaries are tipped with white, and the latter are spotted on their borders with the same. Posterior part of the back and most of the tail coverts pitch-black. Tail feathers buff-orange, tipped with white; the outer ones more broadly and distinctly barred with black: the orange is replaced on the outer web of the exterior feather by white, and on the central pair by broccoli-brown. Chin and belly white; under tail coverts slightly tinged with brown. Neck beneath and breast soiled wood-brown, the former streaked, the latter crossed by arrow-headed marks of blackish-brown, and the flanks and insides of the wings regularly barred with the same. *Bill* blackish above, yellow on the sides and below. *Irides* dusky. *Legs* wax-yellow.

Form.—*Bill* straight, short. Nasal grooves reaching nearly to the point, which is hard and curves down. *Wings* two inches shorter than the long, graduated tail. *Legs* rather stout; the thumb longer, and articulated lower than in the other *Totani*. Inner toe free. *Web* connecting the outer and middle toes short and thick.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	13	0	Length of bill to rictus .	1	6	Length of middle nail .	0	3½
,, of tail . .	3	6	,, of naked thigh .	1	0	,, of hind toe . .	0	4
,, of wing . .	6	7	,, of tarsus . .	2	0	,, of hind nail . .	0	2
,, of bill above .	1	4	,, of middle toe .	1	0			

The *female* is a little longer, has a longer wing, and a proportionally shorter tarsus.

[161.] 6. Totanus ochropus. (Temm.) *White-tailed Tatler.*

Genus, Totanus, Bechst.
Green Sandpiper. Penn. *Arct. Zool.*, ii., p. 475, No. 389 ?
Chevalier Cul-blanc (*Totanus ochropus*). Temm., ii., p. 651.

An individual of this species exists among a collection of birds from the fur-countries, sent to the British Museum by the Hudson's Bay Company. Pennant says he also observed it among the birds collected by Mr. Kuckan in North America.

DESCRIPTION

Of a specimen, from Hudson's Bay, in the British Museum.

Colour.—*Upper plumage* dark hair-brown, with green reflections, dotted on the edges of the scapulars, tertiaries, and a few of the lesser coverts with whitish triangular specks, each speck having a dark margin. *Quills* blackish-brown*. *Tail* and its coverts white; three broad black bars towards the ends of the central tail feathers, fewer on the more exterior ones, and merely a spot or two on the two outer pairs. Superciliary line and cheeks whitish, with dusky streaks: a dark stripe on the lores. Front of the neck, breast, and flanks broccoli-brown, with dark central stripes: rest of the *under plumage* pure white.

Form.—*Bill* straight; nasal grooves extending more than half its length. *Wings* rather longer than the tail. *Tail* square, the middle pair of feathers alone slightly longer than the others. *Web* connecting the outer and middle toes two lines deep. Inner toe almost quite free.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	8	9	Length of bill above .	1	4	Length of middle toe . .	1	0
,, of tail . . .	2	6	,, of bill to rictus .	1	5	,, of middle nail .	0	2
,, of wing . .	5	6	,, of tarsus . .	1	3	,, of hind toe and nail	4	0

—R.

[162.] 7. Totanus chloropygius. (Vieillot.) *Green-rump Tatler.*

Genus, Totanus, Bech.
Solitary Sandpiper (*Tringa solitaria*). Wils., vii., p. 53, pl. 58, f. 3.
Totanus chloropygius. Bonap. *Syn.*, No. 263.
Attickew-shæshæshew. Cree Indians.

This bird has an extensive range, having been found breeding on the high grounds of Pennsylvania, and on the northern extremity of the continent, as well as in most of the intermediate districts. It frequents the gravelly banks of rivers singly or in pairs, and runs swiftly before the traveller, seldom taking wing until hard pressed. Its motions bear considerable resemblance to those of the common *motacilla*. Its eggs are deposited on the beach, no nest being formed.

DESCRIPTION

Of a *female*, killed at Great Bear Lake, lat. 64¼° N., May 14, 1826.

Colour.—*Upper plumage*, including the central pair of tail feathers, dark hair-brown, slightly glossed with green, and interspersed with small marginal, triangular, white spots;

* Neither greater nor lesser quills are bordered or marked with white.—R.

the lateral tail feathers and their coverts regularly barred with black and white, the white bars being broadest on the former: rump feathers merely edged with white. *Wings* unspotted, except on the margins of the tertiaries; lesser quills and their coverts edged with white at the tips; primaries, their coverts, and anterior border of the wing, blackish-brown; shaft of the first quill a little paler. The short eye stripes and *under plumage* white; sides of the head, front of the neck, and breast, streaked with clove-brown; inside of the wings barred with blackish-brown and white. *Bill* brown. *Legs* blackish-green.

Form typical. *Bill* moderate; nasal grooves extending two-thirds of its length. *Tail* somewhat rounded laterally, with a slight approach to double emargination; the middle pair of feathers rather the longest. *Web* between the inner and middle toes merely rudimentary.

The sexes are alike in plumage. The more southern specimens are generally an inch longer, and have the lesser quills and many of the wing coverts spotted on the margins like the dorsal plumage, and white spots on the edges of the middle tail feathers*.

Dimensions

Of the *female*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	8	6	Length of bill to rictus	1	3½	Length of middle nail	0	2
,, of tail	2	3	,, of tarsus	1	3	,, of hind toe	0	3
,, of wing	5	4	,, of naked thigh	0	7	,, of hind nail	0	2
,, of bill above	1	2	,, of middle toe	1	0½	,, of web	0	2¾

—R.

* Temminck remarks, "*Tringa solitaria* de Wilson diffère de notre *Tringa glareola*, seulement par les deux pennes du milieu de la queue, qui dans *solitaria* ont la couleur brune du dos, et sont rangées par bandes alternes brunes et blanches dans *Glareola*."—*Man.*, p. 655.

Totanus macularius. (Temm.) *Spotted Tatler.*

Spotted Tringa (*Tringa maculata*). Edw., pl. 277; lower figure.
Spotted Sandpiper. Penn. *Arct. Zool.*, ii., p. 473, No. 385. Wils., vii., p. 60, pl. 59, f. 1.
Totanus macularius. Temm., ii., p. 656. Bonap. *Syn.*, No. 264.
Chæchiskawsees. Cree Indians.

This species, which is very common in the United States, is stated, by Pennant and Latham, on the authority of Mr. Hutchins, to be an inhabitant of Hudson's Bay. We did not meet with it either in the interior or on the sea-coast.—R.

[163.] 1. Limosa fedoa. (Vieillot.) *Great Marbled Godwit.*

Genus, Limosa, Briss.
The greater American Godwit. Edwards, pl. 137.
Great Godwit, Penn. *Arct. Zool.*, ii., p. 465, No. 371.
Marbled Godwit, Idem, *Suppl.*, p. 68, No. 471 *.
Great Marbled Godwit (*Scolopax fedoa*). Wilson, vii., p. 30, pl. 56, f. 4, *female*.
Limosa fedoa (*American Godwit*). Sab., *Frank. Journ.*, p. 689. Bonap., *Syn.*, No. 266.
Wasawuck apæshew, Cree Indians. Curlew, Residents at Hudson's Bay.

This bird abounds in the interior of the fur countries, and is particularly plentiful on the Saskatchewan plains, where it frequents marshy places, walking on the surface of the *sphagna*, and thrusting its bill among them up to the nostrils; the stomachs of those which we killed, when so engaged, were filled with fragments of leeches. It is merely a bird of passage in the United States, wintering further to the southward. Males killed on the 21st of June were beginning to moult; the plumage of the females, at the same period, appearing much worn, but shewing no new feathers.

DESCRIPTION

Of a *female* killed on the Saskatchewan plains, May 6, 1827.

Colour.—*Upper plumage* liver-brown, each feather spotted or barred with different tints of wood-brown. On the top of the head the dark colour is but narrowly edged with the paler, and on the neck it is confined to central stripes. On the fore part of the back, the scapulars, tertiaries, and middle coverts, the wood-brown forms transverse spots or bars; on the rump, tail, and its coverts, the pale bars are broader than the dark ones. The two upper rows of wing coverts are merely fringed with wood-brown. *Four greater quills* blackish-brown, edged with buff; their inner webs, the remaining quills, the secondaries, and part of the greater coverts, buff-orange sprinkled with black; shaft of the first quill brownish white. Streak from the nostrils to the upper eye-lid and the chin white; cheeks the same, streaked with black. *Under plumage* bright wood-brown, with small liver-brown spots on the neck; breast and flanks barred with the same. The whole inside of the wings and under surface of the tail reddish-orange. *Bill* above and at the tip blackish-brown; on the sides and beneath, flesh-coloured. *Legs* greenish-black.

The *sexes* are alike in plumage, but the female is a third larger. The colours vary with the season, the wood-brown approaching at first to buff-orange, but towards the June moult,

* Edwards figured an individual which was brought from Hudson's Bay by Mr. Isham in 1745; but Latham, on obtaining specimens from the same quarter by Mr. Hutchins, introduced a nominal species (Marbled Godwit, *Suppl. Syn.*, p. 245), retaining, at the same time, Edwards's species, and also, through a misapprehension of Mr. Hutchins's notes, erroneously enumerating the common European Godwit among the birds of Hudson's Bay. He confounds the *limosa rufa* and *melanura* of modern ornithologists under the name of Common Godwit, quoting as a synonym of the latter, Mr. Hutchins's manuscript name of Wasawuck apæshew, which belongs exclusively to *Limosa fedoa*.—R.

changing, particularly about the head and fore part of the back, to white. In some specimens the inner wing coverts and under tail coverts are barred with liver-brown.

Form typical. *Bill* very slightly curved upwards. There is a rudimentary web between the middle and inner toes; the outer web reaches the first joint of the outer toe. Middle nail of our two female specimens and of one male distinctly notched; of another male specimen, entire.

Dimensions.

	Male. Inch.	Lin.	*Female.* Inch.	Lin.		*Male.* Inch.	Lin.	*Female.* Inch.	Lin.
Length, total	19	0	21	0	Length of tarsus	2	10	3	0
,, excluding bill	15	0	16	6	,, of middle toe	1	5	1	6
,, of tail	3	9	4	0	,, of its nail	0	$3\frac{1}{2}$	0	$3\frac{1}{2}$
,, of wing	9	0	9	9	,, of hind toe	0	$5\frac{3}{4}$	0	6
,, of bill above	3	9	4	10	,, of its nail	0	$1\frac{1}{2}$	0	1
,, of bill to rictus	3	9	5	0					

—R.

[164.] 2. Limosa Hudsonica. (Swains.) *Hudsonian Godwit.*

Genus, Limosa, Briss.
Redbreasted Godwit. Edwards, pl. 138.
Hudsonian Godwit. Lath., *Syn. Suppl.*, i., p. 246. Penn., *Arct. Zool., Suppl.*, ii., p. 68.
Scolopax Hudsonica. Lath., *Ind.*, ii., p. 720, sp. 20.
Limosa ægocephala. Bonap., *Syn.*, No. 265?
Che-chish-kæ-wainæ. Saulteur Indians.

Ch. Sp. Limosa Hudsonica, *rostro levissimè recurvo, caudâ trifurcillatâ nigrâ: basi et apice albis, axillaribus nigris.*

Sp. Ch. Hudsonian Godwit, bill very slightly recurved; tail slightly doubly forked, black, with a white base and tip; axillary feathers black.

A specimen of this bird, brought from Hudson's Bay by Mr. Isham, was figured by Edwards, and another was presented by Mr. Hutchins to Dr. Latham, whose description Pennant has copied. It does not appear to have attracted the attention of recent ornithologists (or has been confounded by them with *Limosa melanura*)*. It breeds abundantly in the barren grounds near the Arctic Sea, and feeds on insects and shelly molluscæ, which it obtains in the small sphagnous lakes. Its manners are similar to those of the *Limosa fedoa*.

DESCRIPTION

Of a *male* killed May 25, 1826, at Fort Franklin, lat. $65\frac{1}{4}°$ N.

Colour.—Top of the head liver-brown, with pale edgings; forehead glossed with yellowish-brown. A spotted whitish eye-stripe. Sides of the head, and the neck above and below, wood-brown with dark streaks. Scapulars, interscapulars, and tertiaries, dark liver-brown,

* In *L. melanura* the inner wing covers and the sub-axillary feathers, in every stage of plumage, are white; but in Hudsonica they are as invariably deep black; those farthest from the joints being alone slightly margined with white.—Sw.

tinged with green, the narrow tips and roundish marginal spots dilute wood-brown. Middle and hind part of the back dark clove-brown, with pale edgings. Broad transverse band on the rump, the base and tip of the tail white; middle of the tail and ends of its longer coverts black; central pair of tail-feathers tipped with broccoli-brown. Two middle rows of wing-coverts liver-brown with pale edgings, the others clove-brown. Primary coverts and quills blackish-brown; the latter, except the first four, white at the base under the coverts, and tipped, particularly the posterior ones, with white. Shafts of all the primaries white to near the tips. *Under plumage* posterior to the neck, deep chestnut-brown; the breast marked with roundish black spots, the belly with undulated bars, which become much broader posteriorly and on the tail coverts; the posterior under plumage is also tipped with white, and the two longest under tail coverts are white, with two black marks. Under wing coverts blackish-brown tipped with white; long axillaries, and the lesser coverts surrounding them, unspotted pitch-black. *Bill* dark umber above and at the point; flesh-red elsewhere. *Legs* black.

Form, typical.—*Bill* slightly pitted near the point when dry, and rather more curved upwards than that of *L. fedoa*. *Wings* equal to the *tail*, which is forked to the depth of a quarter of an inch, the central pair of feathers being, however, as long as the outer pair, thus producing a double emargination *. The margins of the toes not so tumid as in the latter bird.

The *males* are a little smaller than the females, and moult earlier in the season. The *females* have the chestnut colour of the under plumage less pure, more tipped with white and barred with black, and the nails of their middle toes are more frequently dentated; there is, however, much variety in this latter respect, some birds having three or four notches in the claw, while in others there are none at all. In one of our female specimens there are three distinct notches on the middle claw of one foot, and only one on the corresponding claw of the other foot.

A female, killed at Fort William, Lake Superior, now in the collection of the Zoological Society, appears to be in the *autumnal plumage*. *Upper surface* dark broccoli-brown, the neck above and below, and part of the wing coverts, paler; the scapulars and tertiaries edged on the tips with soiled yellowish-brown, and crossed by ill-defined sub-terminal bars of greenish clove brown. Breast and flanks yellowish-grey; belly, under tail-coverts, and thighs, white. Posterior part of the back, rump, tail, and rest of the plumage, as described above.

Dimensions.

	Male. Inch.	Lin.	*Female.* Inch.	Lin.		*Male.* Inch.	Lin.	*Female.* Inch.	Lin.
Length, total	15	6	18	0	Length of naked thigh	1	4½	1	6
„ of tail	3	3	3	6	„ of tarsus	2	3	2	4½
„ of wing	8	0	8	6	„ of middle toe	1	3	1	3
„ of bill above	3	0	3	7	„ of middle nail	0	3	0	3
„ of bill to rictus	3	1	3	7½	„ of hind toe and nail	0	5½	0	5½

—R.

* This double forking is constant in all the specimens.

[165.] 1. Scolopax Novoboracensis. (Wilson.) *New York Godwit.*

Genus, Limosa, Briss.
Red-breasted Snipe, Penn., *Arct. Zool.*, ii., p. 464, No. 368. Autumnal plumage.
Brown snipe. Idem, No. 369. Winter.
Red-breasted Snipe (*Scolopax Novoboracensis*). Wilson, vii., pl. 58, f. 1.
Macroramphus griseus. Leach, *Cat. Brit. Mus.*
Bécassine ponctuée (*Scolopax grisea*). Temm., ii., p. 679 *.
Totanus Novoboracensis (*Redbreasted Snipe*). Sab., *Frank. Journ.*, p. 687. Autumnal plumage.
Scolopax (Macroramphus) grisea. Bonap., *Syn.*, No. 267.

This bird is well known in the fur countries, and has an extensive breeding range from the borders of Lake Superior to the Arctic Sea. In the breeding season, the whole under plumage is buff coloured, approaching to ferruginous, in which state it has not hitherto been described. Individuals killed on the Saskatchewan plains had their crops filled with leeches and fragments of coleoptera. The *Scolopax Novoboracensis* forms a link between the snipes and Godwits, having the bill of the former and the feet of the latter.

* M. Temminck introduces this snipe into the list of European birds, on the strength of one individual having been killed in England, and another in Sweden. The English specimen is represented in the Supplement to Montagu's Ornithological Dictionary by a figure, which Temminck terms "*très bonne*," but which differs from our bird in the legs being more slender and longer, the tarsus equalling the bill in length, which is also more slender at its base. It does not appear to be from actual comparison of specimens, but solely from a correspondence in description, that the Swedish bird, named by M. Nilson "*Scolopax Paykullii*," has been referred to this species.—R.

Limosa Edwardsii. *The White Godwit.*

Genus, Limosa, Briss.
The White Godwit from Hudson's Bay (*Fedoa Canadensis rostro sursum recurvo*). Edwards, pl. 139. Posterior figure.

We have thought it right to mention in a note, and designate by a specific name, a bird brought from Hudson's Bay by Mr. Isham in 1745, and figured by Edwards. It was considered by this author to be the Common Godwit (*Limosa rufa*, Briss.), changed to white by the coldness of the weather. The *Limosa rufa* is not known to inhabit America; and Edwards's bird differs from the other Godwits described in this work, in the great curvature of its bill. I have obtained no further information respecting this bird than that which is contained in Edwards's short description, which is as follows:—

"This bird is of the size of the Redbreasted Godwit (*Limosa Hudsonica*), and its measures agree pretty nearly therewith, except the Bill, which is rather longer, and turns upwards towards its point, like that of *Avocetta* (*recurvirostra*). The *bill* is of an orange colour, but black at the point; it bends gradually upwards, like a scythe, and is justly represented in the figure. The plumage of this bird is white all over, excepting the tail, the greater quills, and the small feathers on the ridge of the wing, which are of a dirty or yellowish-white; the covert feathers within side of the wings are light brown; the legs are bare above the knees; the outer is joined to the middle toe; the legs, feet, and claws, are all of a dark brown colour." In the figure there is a web represented between the bases of the inner and middle toes, probably through the inadvertence of the engraver, as it is not noticed in the text.—R.

DESCRIPTION

Of a *female* killed at Great Bear Lake, May 25, 1826.

Colour.—Top of the head, back of the neck, scapulars, tertiaries, and some of the intermediate coverts, striped and spotted on the margins with ferruginous, that colour forming transverse bars on the longer scapulars and tertiaries. Wing coverts and secondaries clove-brown; the former narrowly edged with white, the latter striped on the borders and shafts with the same. Greater quills blackish-brown, shaft of the first one white. Middle and hind parts of the back white, the rump marked with round spots of blackish-brown, which, on the tail coverts, change to transverse bars. *Tail* crossed by nine blackish-brown bars, alternating with white ones, that are tinged on the central pair of feathers with ferruginous. Superciliary stripe, and whole *under plumage*, buff-orange. Sides of the head minutely spotted with dark-brown, crowded into a stripe on the lores. Front of the neck, sides of the breast, flanks, and tail coverts, marked with scattered round spots of the same, larger, and forming bars under the wings. Inner wing coverts barred with white and clove-brown. *Bill* and legs wax-yellow; the tip of the former blackish.

Form.—*Bill* straight, compressed at the base, with a rounded ridge; grooved to near the tip, which is depressed and dilated like the bill of a Snipe, and is minutely pitted, when dry, with a central furrow in both mandibles; tip of the upper one rather acute, projecting beyond the lower one, but not bent down. The epidermis of the base of the bill above is transversely wrinkled. *Wings* equal to the even *tail*. The central pair of tail feathers are occasionally slightly longer than the rest. Middle and outer toes connected to the first joint by a web.

The *sexes* are alike in plumage; the dimensions of the females being greater. Specimens killed towards the end of July, on the shores of Hudson's Bay, have the posterior part of the belly and the under tail coverts white; the latter barred with black. None were seen in the winter dress described by Temminck. A *male*, killed on the 26th of July, at Hudson's Bay, and consequently after its summer moult, had the upper plumage, breast, and inner wing coverts, as described above; the belly, vent, thigh feathers, and under tail coverts, white; the black spots as above. This specimen, when recent, was nine inches and a half long.

Dimensions

Of the *female*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	11	6	Length of bill to rictus	2	$4\frac{1}{2}$	Length of hind toe	0	3
,, of tail	2	6	,, of tarsus	2	$5\frac{3}{4}$	,, of hind nail	0	2
,, of wing	5	8	,, of middle toe	0	11	,, of web	0	$3\frac{1}{4}$
,, of bill above	2	6	,, of middle nail	0	$2\frac{1}{4}$	,, of naked thigh	1	0

—R.

[166.] 2. Scolopax Drummondii. (Swains.) *Drummond's Snipe.*

Genus, Scolopax, Linn.
Peethapacasew. Cree Indians.

Ch. Sp. Scolopax Drummondii, *rectricibus sedecim, paribus duobus exterioribus paulò angustioribus nigro et albo distinctis ; cæteris ferrugineo latè fasciatis.*

Sp. Ch. Drummond's Snipe, tail of sixteen feathers ; the two outer pairs somewhat narrowed, varied with black and white ; the rest banded with ferruginous.

This Snipe is common in the fur-countries up to latitude 65°, and is also found in the recesses of the Rocky Mountains. Its manners are in all respects similar to those of the European Snipes. It is intermediate in size between the *Sc. major* and *gallinago ;* it has a much longer bill than the latter, and two more tail feathers. Its head is divided by a pale central stripe, as in *Sc. gallinula* and *major :* its dorsal plumage more distinctly striped than that of the latter ; and the outer tail feather is a quarter of an inch shorter than that of *S. Douglasii.*

DESCRIPTION

Of a specimen, killed on the Rocky Mountains.

Colour.—*Dorsal plumage* and *wings* mostly brownish-black ; the top of the head, scapulars, interscapulars, intermediate coverts, posterior greater ones, and tertiaries, reflecting green and mottled, or barred with yellowish-brown ; this colour also forming stripes from the forehead to the nape, over the eyes to the sides of the neck, and more broadly on the exterior edges of the scapulars and interscapulars. Middle dorsal plumage and first quill fringed with white, and most of the wing coverts and lesser quills tipped with the same. Shafts of the primaries deep brown ; an inch of the first, near its point, whitish. Rump and tail coverts yellowish-brown, barred with clove-brown. *Tail,* of sixteen feathers ; the three central pairs rich greenish-black, with reddish-orange or ferruginous ends, crossed by a blackish subterminal line, and tipped with white ; the three exterior pairs barred alternately with clove-brown and brownish-white,—the white tips broader ; the two intermediate pairs coloured nearly like the middle ones, but partly barred and tipped with white. *Under plumage :*—A

Note.—A specimen of a Snipe, killed by Mr. Douglas on the banks of the Columbia, sold by the Horticultural Society, and now in Mr. Swainson's museum, is, probably, a distinct species, though at present the following specific characters rest upon the authority of only a single specimen. Its characters are,

Scolopax Douglasii (Swains.), *rectricibus sedecim latitudine æqualibus omnibus ferrugineo latè fasciatis præter extimos qui albescent.*

Douglas's Snipe ; tail of sixteen feathers, not narrowed, all banded with ferruginous, except the outer pair, which are paler.

Total length, 11½ inch. ; of wing, 5 inch. ; of tarsus, 1 inch 3½ lines ; middle toe, 1 inch 2 lines ; its nail, 3½ lines.

The following, killed in Equinoctial Brazil by Mr. Swainson, is unquestionably distinct. It is the only Snipe hitherto found in South America, where it is very common.

Scolopax Braziliensis (Swains.), *rectricibus sedecim ; mediis ferrugineo latè fasciatis ; tribus exterioribus gracillimis albis quinquies nigro interruptè fasciatis.*

Brazilian Snipe ; tail of sixteen feathers ; the middle ones banded with ferruginous ; the three outer ones very narrow, white, with five interrupted black bands.

dark brown stripe on the lores, another under the ear. Sides of the head, front of the neck, and breast, pale wood-brown, with central spots of dark umber; the flanks, insides of the wings, and under tail coverts, barred with black and white, which on the latter is tinged with brown. Belly white. *Bill* blackish towards its tip, dark wood-brown at the base.

Form typical. One small fold of the epidermis at the upper base of the bill. *Tail* rather long, graduated, the feathers decreasing a little in breadth as they are more exterior.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	11	6	Length of bill to rictus	2	6½	Length of middle nail	0	3
,, of tail	2	10	,, of naked thigh	0	5	,, of inner toe	0	11
,, of wing	5	3	,, of tarsus	1	3	,, of hind toe	0	4
,, of bill above	2	7	,, of middle toe	1	3¼	,, of hind nail	0	1

—R.

[167.] 3. Scolopax Wilsonii. (Temm.) *Wilson's Snipe.*

Genus, Scolopax, Linn.
Snipe (*Scolopax gallinago*). Wils., vi., p. 18, pl. 47, f. 2.
Scolopax Wilsonii. Bonap. *Syn.*, No. 268; and p. 445. No. 306, *b*. Brit. Mus.

A specimen of a Snipe from Hudson's Bay, in the British Museum, possesses all the distinctive characters ascribed by the Prince of Musignano to his *Sc. Wilsonii*, of which we have seen no authenticated examples. It differs from *S. Drummondii* in its shorter tail, the outer feathers of which are more attenuated.

DESCRIPTION

Of a specimen, in the British Museum, from Hudson's Bay.

Colour.—Plumage of *Sc. Drummondii*. *Tail*, of sixteen feathers; six middle pairs reddish-black at the bases, brownish-orange* on their distal halves, slightly tipped with white, and crossed by a narrow subterminal pitch-black bar; two outer pairs brownish-white, with three narrow, equidistant, blackish bars.—In form the tail is rounded laterally; the middle pair of feathers rather narrower and shorter than the three succeeding pairs, which are equal in length, and about four lines and a half wide; the four exterior pairs become shorter and narrower in succession, the outer pair being only two lines wide, or not quite half the breadth of the middle ones.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	10	6	Length of bill	2	6	Length of middle toe	1	1½
,, of tail	2	3	,, of naked thigh	0	5	,, of middle nail	0	2¼
,, of wing	5	4	,, of tarsus	1	2	,, of hind toe and nail	0	5

—R.

* The orange is much deeper on the four central pairs of feathers than on the two adjoining pairs.—R.

[168.] 1. Rallus Novoboracensis. (Bonap.) *Yellow-breasted Rail.*

Genus, Rallus, Linn.
Yellow-breasted Gallinule. Penn. *Arct. Zool.*, ii., p. 491, No. 410.
Perdix Hudsonica. Lath. *Ind.*, ii., p. 655, sp. 41.
Gallinula Novoboracensis. Idem, ii., p. 771, sp. 16.
Rallus ruficollis. Vieil. *Gal.*, 266.
Rallus Novoboracensis. Bonap. *Syn.*, p. 273.
Pawpakapæteësees. Cree Indians.

We did not obtain specimens of this bird, nor did we learn any particulars respecting the extent of its migrations. Pennant and Latham merely described examples that were in the Blackburnian Museum, without giving any account of its habits; and as it is not noticed by Wilson, a history of it is still a desideratum. It is to be hoped that this will be supplied by the Prince of Musignano, in the forthcoming volume of *American Ornithology*. In the meantime, Mr. Hutchins's manuscript notice, written about the year 1777, may be interesting to ornithologists:—

"This elegant bird is an inhabitant of the marshes* from the middle of May to the end of September. It never flies above sixty yards at a time, but runs with great rapidity among the long grass near the shores. In the morning and evening it utters a note, which resembles the striking of a flint and steel; at other times it makes a shrieking noise. It builds no nest, but lays from ten to sixteen perfectly white eggs among the grass."

DESCRIPTION.

"The upper mandible is black throughout; the lower one resembles the horn of lanterns, with a black nib. *Irides* dark brown. The forehead is dark brown; the posterior part of the neck is speckled with white; the scapulars and coverts of the wings are black, each feather edged with yellowish-brown, and neatly barred with white across the middle and near the end; the *quill feathers* are light blue, the external web of the first white; some of the secondaries are white, shaded with blue. *Tail* very short, dark coloured, crossed by white, and gently edged with light brown: the coverts of the tail are void of edging. *Throat* white; breast light brown; belly white, with brown partitions; thighs black, barred with white. *Legs* of a faint lead colour. Toes long and slender; the outer and middle one connected a little way by a membrane.—The young ones are quite black."

* On the coast of Hudson's Bay, near the efflux of Severn River, where Mr. Hutchins resided.—R.

[169.] 2. Rallus Carolinus. (Bonap.) *Carolina Rail.*

Genus, Rallus, Linn.*
Little American Water-hen (*Gallinula minor*). Edw., pl. 144.
Soree gallinule. Penn. *Arct. Zool.*, ii., p. 491, No. 409.
Gallinula Carolina. Lath. *Ind.*, ii., p. 771, sp. 17.
Rail (*Rallus Virginianus*). Wils., vi., p. 27, pl. 48, f. 1. Ral. Carolinus, *Gen. Ind.*
Gallinula Carolina (*Soree gallinule*). Sab. *Frankl. Journ.*, p. 690.
Rallus Carolinus. Bonap. *Syn.*, No. 272.
Pawpawkaw-pæteesew. Cree Indians.

This bird is common in the summer season throughout the fur-countries up to the sixty-second parallel, and is particularly abundant on the banks of the small lakes that skirt the Saskatchewan plains. It is scarce in the summer within the United States, though a few breed there; but arrives in great numbers on the Delaware in August, retiring farther southwards in October.

DESCRIPTION

Of a *male*, killed on the Saskatchewan plains, May, 1827.

Colour.—*Upper plumage* between hair-brown and oil-green, with brownish-black central marks, that do not exist, however, on the upper part of the neck and wing coverts. The scapulars, interscapulars, tertiaries, shoulders, and the inner webs of the central tail feathers, are longitudinally striped near their margins with white; the wing edged and greater coverts sparingly spotted with the same. Crown, forehead, lores, chin, and a medial stripe on the throat, black. A line between the eyes, orbits, cheeks, sides of the throat, and breast, bluish-grey. Flanks, sides of the rump, and thighs barred with white, blackish-brown, and hair-brown. Vent buff-orange, barred and edged with black. Belly and under tail coverts white, the latter tipped with buff. *Bill* bright yellow. *Legs* greenish-yellow.

Form.—*Bill* short, straight, much compressed; its depth at the base equal to half its length. Upper mandible obsoletely notched at the tip. *Wings* short and rounded; second quill, which is the longest, slightly exceeding the third; first equal to the fifth. *Hind toe* equal in length to the first phalanx of the outer toe. *Nails* much compressed, slightly curved, and acute like those of the *Merulidæ*.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	9	3	Length of bill to rictus	0	$10\frac{1}{2}$	Length of inner toe	1	$0\frac{1}{2}$
,, of tail	2	1	,, of tarsus	1	$3\frac{1}{2}$	,, of its nail	0	$3\frac{1}{2}$
,, of wing	4	$4\frac{1}{2}$	,, of middle toe	1	$3\frac{1}{4}$	,, of hind toe	0	5
,, of bill above	0	$10\frac{1}{2}$	,, of middle nail	0	4	,, of its nail	0	$2\frac{3}{4}$

—R.

* We concur with M. Temminck and the Prince of Musignano in not adopting, even as types of form, the genera named *Crex*, *Ortygometra*, and *Zapornia*; while very many of the modern species of the Gallinula are true *Ralli*. —Sw.

[170.] 1. Fulica Americana. (Gmelin.) *American Coot.*

Genus, Fulica, Linn.
Common Coot (*Fulica atra*). Wils., ix., p. 61, pl. 73, f. 1.
Fulica Americana. (Gmel.) Sab. *Frankl. Journ.*, p. 690. Bonap. *Cat.*, No. 270.
Whiskeychawn-weesheep. Cree Indians.

The small grassy lakes that skirt the Saskatchewan plains are much frequented by this Coot, which in its manners exactly resembles the closely allied European species*. It was not seen by us near Hudson's Bay, nor higher than the fifty-fifth parallel. Mr. Swainson has obtained specimens from the Table-land of Mexico. It is observed to arrive in the fur-countries always in the night-time. The crops of those we killed were filled with fine sand.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May 13, 1827.

Colour.—Head and neck velvet-black. Fore part of the back, scapulars, and wing coverts blackish-grey; tertiaries, tips of the scapulars, rump, and tail coverts, clove-brown, with a greenish-tinge. *Quills, tail*, and vent pitch-black; tips of the secondaries and under tail coverts white. *Under plumage* lead-grey. *Bill* pale horn colour, with a chestnut ring near its tip; frontal callus dead white, terminating superiorly in a rhomboidal chestnut-coloured spot. *Legs* dull bluish-green.

Form typical. *Wings* as long as the rounded or graduated tail, which consists of fourteen feathers †.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	16	6	Length of bill to rictus	1	5	Length of middle nail	0	7
,, of tail	2	0	,, of naked thigh	0	9	,, of hind toe	0	11
,, of wing	7	6	,, of tarsus	2	1	,, of its nail	0	4
,, of bill and callus	2	0	,, of middle toe	2	11			

Other males are upwards of an inch shorter than the preceding, and they vary in the extent and depth of the blackish-grey of the dorsal aspect.—R.

* Mr. Sabine gives in detail the specific differences between the two, in the work above cited.

† Cuvier says that the tail contains sixteen feathers; but in a considerable number of specimens which I examined, I found but fourteen, and in some instances only ten or twelve.—R.

PHALAROPUS WILSONII.

London Printed for John Murray Publisher to the Admiralty

[171.] 1. Phalaropus Wilsonii. (Sabine.) *Wilson's Phalarope.*

Genus, Phalaropus, Briss.
Phalaropus Wilsonii (*American Phalarope*). Sab. *Frankl. Journ.*, p. 691.
" Phalaropus lobatus. Ord, *Wils. Orn.*, *Ed. nov.*" *Fide* Bonap.*
Phalaropus frenatus. Vieil. *Gal.*, pl. 271.
Phalarope lissère (*Ph. fimbriatus*). Temm. *Col. Pl.* 370†.
Phalaropus (Holopodius) Wilsonii. Bonap. *Lyc. N. York*, ii., p. 159; *Syn.*, No. 279.
Lobipes incanus. Jard. & Selby, *Ill. of Orn*; young.

Plate lxix.

This elegant Phalerope breeds on the Saskatchewan; but was not seen by us beyond the fifty-fifth parallel, nor on the coast of Hudson's Bay. It is not uncommon on the borders of the lakes adjoining the city of Mexico, from whence Mr. Swainson has received both young and adult specimens. It lays two or three eggs among the grass on the margins of small lakes: they are very obtuse at one end, taper much at the other, and have a colour intermediate between yellowish-grey and cream-yellow, interspersed with small roundish spots and a few larger blotches of umber-brown, more crowded at the obtuse end. The eggs measure sixteen lines and a half in length and eleven across. This bird approaches nearest to *Phalaropus hyperboreus* in the form of its bill. Its legs and toes, however, are longer; and the latter are more narrowly bordered and connected by shorter webs; the hind toe, likewise, is longer; and all the nails are longer and more pointed;—peculiarities of structure which seem to fit it more for walking on the surface of marshes filled with *sphagna*, than for exercising the full powers of natation possessed by the *Ph. hyperboreus* and *platyrhynchus*. It has, however, the compact and thick under plumage of these Phalaropes, which distinguishes them so readily from the *Tringæ*. We, unfortunately, had no opportunity of studying the habits of this interesting species, and of contrasting them with those of its congeners.

DESCRIPTION

Of a *female*, killed on the Saskatchewan, 21 June, 1827.

Colour.—Crown of the head and lores pearl-grey; medial stripe on the neck greyish-white. *Dorsal plumage*, *wings*, and *tail* broccoli-brown; shaft of the primaries umber-brown, the first one nearly white; lesser quills and their coverts slightly edged with white. Sides of the neck rich chestnut-brown, which is continued in a stripe over the shoulders,

* The Prince of Musignano refers also to the *Ph. lobatus* of Ord (Wils., first ed., pl. 73, f. 2), as a representation of this bird; but surely such an erroneous and imperfect account, confessedly compiled from partially obliterated notes and an unfinished sketch, does not deserve to be quoted,—notwithstanding that the specimen from which they were taken proves on examination to be this species.—R.

† We know not for what reason M. Temminck has changed the name of this species, long before consecrated to the memory of the great American ornithologist. The figure in the *Pl. Col.* is very incorrect: the bill is represented as much arched, and the regularity of the lateral rufous bands cannot be traced.—Sw.

down the outside of the interscapulars; there is a similar stripe on the outer border of the scapulars, and a tinge of the same colour on the throat. A spot before the eye, the sides of the rump, tips of the lateral tail feathers, also stripes on their shafts and mottling on their inner webs, the borders of the upper tail coverts, the chin, and *under plumage*, pure white. A velvet-black band commences on the lores, includes the eye, and runs half way down the neck, becoming broader after passing the ears. *Bill* and *legs* brownish-black.

Form.—*Bill* much resembling that of a Tatler (*Totanus chloropygius*), but rather more slender, the height at the base less, and ridge depressed throughout; it is quite straight, and nearly of equal breadth to the tip of the upper mandible, which is bent down. *Nasal grooves* nearly obsolete, and close to the commissure. *Head* narrow; *forehead* lengthened. *Eyes* near the crown. *Neck* rather long. *Wings* equal to the *tail*, which consists of twelve feathers, and has a double but very shallow emargination; the exterior and middle feathers equal. *Tarsus* rather stout; compressed and two-edged as in the Sea-ducks; fore toes bordered by narrow membranes, that are very slightly or not at all contracted at the joints; and connected by short webs: the outer web, which is the longest, including only one joint of the outer toe. *Nails* moderately curved, acute, and excavated beneath.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	10	6	Length of bill to rictus .	1	4½	Length of middle nail .	0	2
,, of tail . .	2	6	,, of naked thigh .	0	7½	,, of hind toe . .	0	4
,, of wing . .	5	4	,, of tarsus . .	1	5	,, of hind nail .	0	1
,, of bill above .	1	4	,, of middle toe .	1	0	,, of outer web . .	0	3

Other specimens are nearly an inch shorter than the above.—R.

[172.] 2. Phalaropus hyperboreus. (Lath.) *Hyperborean Phalarope.*

Genus, Phalaropus, Lath.
Coot-footed Tringa. Edw., pl. 143; and pl. 46, young.
Phalaropus hyperboreus et fuscus. Lath. *Ind.*, ii., pp. 774, 775; sp. 1 and 4.
Phalarope à hausse-col (*Lobipes hyperboreus*). Cuv. *Reg. An.*, i., p. 533.
Phalarope hyperboré (*Phalaropus hyperboreus*). Temm., ii., p. 709.
Phalaropus hyperboreus (*Red Phalerope*). Sab. *Frankl. Journ.*, p. 690.
Accummee-sheeshick. Cree Indians.

This Phalerope breeds on all the Arctic coasts of America, and resorts to the shores of Hudson's Bay in the autumn. It was first made known by Edwards, who figured specimens from thence. It frequents shady ponds, in which it swims with ease and elegance, its attitudes much resembling those of the common Teal; and, like that bird, it is continually dipping its bill into the water, picking up the small insects which constitute its food. Its eggs, two or three in number, have an olive-yellow colour, and are closely spotted with blackish-brown.

DESCRIPTION

Of a *female*, killed at Great Bear Lake, June 7, 1826.

Colour.—Sides and front of the neck bright brownish-orange; medial stripe on the latter, the sides of the breast, top and sides of the head, the nape, and fore part of the back, greyish-black; rest of the *upper plumage* blackish-brown, the scapulars and interscapulars striped exteriorly with yellowish-brown; the lateral tail feathers clove-brown; their shafts and edges, several bars on their lateral coverts, a band on the ends of the greater wing coverts and edges of the tertiaries, the shafts of the greater quills, fringe of the intermediate coverts, the chin, throat, and rest of the *under plumage*, pure white, blotched with black beneath the wings. *Bill* black. *Legs* blackish-green.—A specimen, killed at Hudson's Bay, on the 28th August, and therefore after its *summer moult*, has the throat and lores brownish-white; the breast blackish, mottled with white; the anterior dorsal plumage, scapulars, and tertiaries, broadly bordered with wax-yellow; the tail tinged with rust colour, and the belly clouded with a pale brown tint.

Form.—*Bill* shorter than that of *Ph. Wilsonii*, and rather more awl-shaped, but otherwise very similar. Its ridge is somewhat less depressed, and the nasal grooves consequently wider. Inside of the upper mandible smooth. *Tail*, of twelve feathers moderately graduated, as long as the *wings*. *Tarsus* shorter than the bill. *Webs* including two joints of the outer toe and one of the inner one; the remaining phalanges of the fore toes broadly bordered with deeply scalloped membranes. *Hind toe* free, its inner edge attenuated. *Nails* very small.

Dimensions

Of the *female*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	7	6	Length of bill to rictus	1	0	Length of middle nail	0	$0\frac{3}{4}$
,, of tail	2	3	,, of naked thigh	0	6	,, of hind toe	0	2
,, of wing	4	3	,, of tarsus	0	$10\frac{1}{2}$	,, of outer web	0	5
,, of bill above	0	$11\frac{1}{2}$	,, of middle toe	0	$9\frac{1}{2}$	Extent of wing	12	6

—R.

[173.] 3. Phalaropus fulicarius. (Bonap.) *Flat-billed Phalerope.*

Genus, Phalaropus, Briss.

The Red Coot-footed Tringa (*Tringa rufa*). Edw., pl. 142*.

Red Phalerope (*Tringa fulicaria*). Penn. *Arct. Zool.*, ii., p. 494, No. 413.

Red Phalerope (*Phalaropus hyperboreus*). Wils., ix., p. 75, pl. 73, f. 4.

Phalaropus platyrhynchus. Sab. *Greenl. Birds*, p. 536; *Suppl. Parry's First Voy.*, p. cci. Richards. *Append. Parry's Second Voy.*, p. 335.

Phalaropus fulicarius. Bonap. *New York Lyc.*, ii., p. 159; *Syn.*, No. 277.

This neat little bird abounds in high northern latitudes, breeds on the North Georgian Islands and Melville Peninsula, and was often seen swimming on the

* Unless the variations in the length of the bill and in the total size of this bird are greater than usual even among the *Grallatores*, two species of *Flat-billed Phaleropes* have been confounded together by authors. Plates 142 and 308 of

sea far from land, by the Northern Expeditions. Its eggs, generally four, are oil-green, varied by crowded irregular spots of dark umber-brown, which become confluent towards the obtuse end.

DESCRIPTION

Of a specimen killed on the Columbia River.

Colour.—Sides of the crown, circumference of the eyes, the ears, hind head, and a stripe along the back of the neck, blackish-brown; rest of the *dorsal plumage* ash-grey, with blackish bases. Forehead, middle of the crown, superciliary bands, chin, sides and front of the neck, sides of the rump, and the whole *under plumage*, pure white; the dorsal plumage and part of the lesser wing coverts are also slightly fringed with white; and the ends of the scapulars, the secondaries, and the lateral tail feathers, more broadly edged with the same. Two or three of the posterior secondaries are almost entirely white, and the quill shafts are brownish white. *Bill* brown. *Feet* oil-green *.

Form.—*Bill* straight, depressed, much stouter and wider than the bills of the two preceding phaleropes; of equal breadth (1½ line) from base to the point, which is shortly acuminated, but not very acute; tip of the upper mandible turning down. *Nasal grooves* reaching to the narrowed tip. *Head* compressed as in the other phaleropes. *Wings* considerably longer than the tail, which is rather long and graduated; the outer feather three-quarters of an inch longer than the middle ones. Structure of the feet, extent of the webs, &c., as in *Ph. hyperboreus;* the proportional length of the toes to the tarsus being, however, rather greater.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	7	0	Length of bill above .	0	10	Length of middle toe .	0	9¼
,, of tail . .	2	4½	,, of bill to rictus .	0	11	,, of its nail . .	0	1¼
,, of wing .	4	9	,, of tarsus . .	0	10	,, of hind toe and nail	0	3

—R.

Edwards represent birds having very different sized bills; and the known accuracy of that author in all cases where he took the original sketches himself, lead us to conclude that the difference existed in the specimens from which he drew. This opinion is strengthened by the examination of a Phalerope killed in the Orkneys, and now in the British Museum, agreeing in size and colour with Edwards's bird, pl. 142, but larger in all its dimensions than the specimens of the Flat-billed Phalerope in the grey winter dress, existing in the same Museum. We have not sufficient materials for entering more fully into the subject; but if further researches detect two distinct species, both, we have no doubt, will be found to exist in the fur-countries. Edwards's bird, pl. 142, corresponds with summer specimens killed by Sir Edward Parry on Melville Peninsula; while the specimen from the Columbia, described in the text, seems to agree in all respects with the winter dress of the *Ph. platyrhynchus* of Temminck.—R.

* Specimens killed in *summer on Melville Peninsula* have the blackish-brown *dorsal plumage* broadly bordered with brownish-orange: the whole *under plumage* is of this latter colour; and the *rump* is white, striped with black. Superciliary bands brownish. *Wings* nearly as described above. We regret that, these specimens being deposited in the Edinburgh Museum, we have not been able to compare them with the Columbia one, so as to ascertain whether they are of the same or of a different species.—R.

Pennant describes under the name of *Plain Phalarope* *, a bird which was taken to the north of Behring's Straits, near Icy Cape, in the beginning of August or end of July on Captain Cooke's last voyage. This is considered by recent authors to have been merely an example of *Ph. hyperboreus* in a state of moult, in which the scolloped membranes of the toes had folded in, as they do when dry. Setting aside the injustice of supposing that a naturalist of Pennant's habits of industry would expressly mention this as a specific mark of distinction, without having examined it, the form of the bill, which he states to be *dilated at the end,* presents another characteristic difference; and I think that the *Plain Phalarope* ought not to be erased from our lists merely because a second example has not hitherto been detected. I have, however, other grounds for believing that a very handsome Phalarope, answering, in some particulars, to the *Plain Phalarope*, and unknown to the naturalists of the present day, exists in America. In September 1819, while at York Factory, Hudson's Bay, a small bird was brought to me, which had a depressed bill, rounded at the end, with the feet more than half palmated, and the toes evenly bordered to the nails. Its plumage, as far as my recollection goes, was mostly white. The natives said that it was the only bird of the kind they had ever seen. From the pressure of other affairs, I could neither prepare the skin of the specimen nor take a description, but I put the bird into spirits, and sent it, along with a considerable number of other specimens, to England by a ship which was then on the point of sailing. They reached London, but I never could trace what became of any of them afterwards. I think, from the rarity of this bird at Hudson's Bay, that it most probably frequents the western side of the Rocky Mountains, and hope that it may one day be found in New Caledonia.—R.

* PHALAROPUS GLACIALIS (Lath.) *Plain Phalarope* (Penn.)
Tringa glacialis. GMEL.

"Ph. with a slender bill, dilated at the end. Crown dusky and dull yellow; across each eye a black line; cheeks and fore-part of the neck clay coloured; breast and belly white; back and tertials dusky, edged with dull yellow. Coverts, primaries, and tail cinereous; the last edged like the tertials. Legs yellowish. Toes bordered with a plain or unscolloped membrane. Taken in the Frozen Sea, lat. 69½° N., long. 191½° E."—*Arct. Zool.*, ii., p. 495.

NATATORES.

[174.] 1. Podiceps cristatus. (Lath.) *Crested Grebe.*

Genus, Podiceps, Lath.
The Greater Dobchick (*Colymbus major*). Edwards, pl. 360.
Grebe huppé (*Podiceps cristatus*), Temm. ii., p. 717.
Podiceps cristatus, Bonap., *Syn.*, No. 364.

The *Grebes* are to be found in all the secluded lakes of the mountainous and woody districts of the fur countries, swimming and diving with such dexterity, that they have obtained the appellation of "water-witches." They have no tails, and their legs being placed at the extremity of the body, they necessarily assume an erect position on land. They walk badly, and rise from the ground with difficulty. Their nests, formed of a large quantity of grass, placed among reeds and carices, rise and fall with the water. They feed on small fish, frogs, and insects.

DESCRIPTION

Of a specimen, killed on the Saskatchewan.

Colour.—Upper surface of the head, occipital crest, and ends of the lateral ruffs, greyish-black. Bases of the latter and sides of the nape, brownish-red. Back of the neck, dorsal plumage, and wings, blackish-brown. Upper border of the wing, tertiaries, and all the secondaries, except three or four long posterior ones, a spot before the eye, the chin, sides of the head, and *under plumage* of the neck and body white. The vent and sides under the wing clouded with blackish-grey. Bases of the lateral ruffs brownish-orange. *Bill* yellowish, the ridge of the upper mandible and *gonys* of the lower one reddish-brown; tips of both white.

Form.—*Bill*, about the length of the head, strong, and tapering from the base, much compressed towards the point; mandibles sloping equally to the tip; commissure straight. *Ruff* conspicuous, but not large, situated on the sides and front of the throat. A short crest on each side of the occiput. *Neck* long and slender. Posterior edge of the tarsus moderately rough.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	23	0	Length of bill to rictus	2	7	Length of middle toe	2	5½
,, of wing	7	0	,, from nostrils to tip	1	5	,, of its nail	0	4½
,, of bill above	2	0	,, of tarsus	2	8	,, of outer toe	2	8
						,, of its nail	0	4

—R.

[175.] 2. PODICEPS RUBRICOLLIS. (Temm.) *Red-necked Grebe.*

GENUS, Podiceps, LATH.
Grebe Jou-gris (*Podiceps rubricollis*), TEMM., ii., p. 720.
Podiceps rubricollis (*Red-necked Grebe*). SAB., *Frankl. Journ.*, p. 692. BONAP., *Syn.*, No. 365.

No specimen of this bird being obtained on the last expedition, the following description is taken from Mr. Sabine's account, above quoted, of one killed at Great Slave Lake in 1822.

DESCRIPTION
Of a *mature* individual, killed at Great Slave Lake, May, 1822.

COLOUR.—Upper surface of the head and nape shining black; medial line of the neck above and dorsal plumage dark-brown. Secondaries and belly white. Chin and throat drab coloured; sides and front of the neck and breast ferruginous. *Bill* black above, horn-coloured below; as long as the head.

Length, to ends of toes stretched out, 28½ inches. Bill from rictus 2½ inches; from front 1½ inch.

[176.] 3. PODICEPS CORNUTUS. (Lath.) *Horned Grebe.*

GENUS, Podiceps, LATH.
Eared or Horned Dobchick. EDW., pl. 145; Hudson's Bay specimen *.
Black and White Dobchick. IDEM, pl. 96, anterior figure. Young Engl. spec.
Horned Grebe. PENN., *Arct. Zool.*, ii., p. 497, No. 417. Dusky Grebe, No. 420. Young.
Grebe cornu *ou* Esclavon (*Podiceps cornutus*). TEMM., ii., p. 721.
Podiceps cornutus (*Horned Grebe*). SAB., *Frankl. Journ.*, p. 693. BONAP., *Syn.*, No. 366.
Seekeep, CREE INDIANS. Shinkepees, SAULTEUR INDIANS.

Is very common in the fur countries, frequenting every lake with grassy borders.

DESCRIPTION
Of a specimen killed at Great Slave Lake.

COLOUR.—Head, nape, and throat, greenish-black; a broad buff-orange eye band is reddish before the eye and on the side of the nape. Back of the neck, dorsal plumage, and wings, blackish-brown; the secondaries white. Under surface and sides of the neck, sides of the breast, the flanks and thighs, reddish-orange; vent greyish; rest of the *under plumage* shining yellowish-white. *Orbits* and *rictus* lake-red. *Bill* bluish-black; its tip white. *Irides* red. *Legs* brownish; paler interiorly.

FORM.—*Bill* short, compressed throughout, both mandibles sloping to a point, commissure

* EDWARDS's coloured figure represents our bird very exactly.

straight *. Plumage of the sides of the head and nape lengthened, forming a lateral ruff, and giving a square form to the head. The coloured eye-band forms the upper margin of the ruff. Scales on the posterior margin of the tarsus slightly rough. Nail of the middle toe finely pectinated. The *young* want the horned eyeband and reddish-orange plumage, having the throat and sides of the head below the eye, and a spot on the lores white; forepart of the neck ash-coloured.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	15	6	Length from nostrils to tip	0	7	Length of middle nail .	0	4
,, of wing . .	5	4	,, of tarsus . .	1	8	,, of outer toe .	2	0
,, of bill above .	1	0	,, of middle toe . .	1	10	,, of its nail . .	0	3
,, of bill to rictus .	1	4						

—R.

[177.] 4. Podiceps Carolinensis. (Lath.) *Pied-bill Grebe.*

Colymbus Podiceps. Lin., *Syst.* 223.
Pied-bill Grebe. Penn. *Arct. Zool.*, ii., p. 497, No. 418.
Podiceps Carolinensis (*Pied-bill Grebe*). Sab., *Frankl. Journ.*, p. 692. Bonap., *Syn.*, No. 367.
Peesheesheet-seekeep. Cree Indians.

Mr. Sabine's description of a specimen obtained on Sir John Franklin's first expedition is given below, no specimens of this bird having been got on the last expedition.

DESCRIPTION

Of a specimen killed at Great Slave Lake, May, 1822.

Colour.—*Upper plumage* dark-brown; the secondaries tipped with white. A conspicuous black patch on the chin. Throat and cheeks light-brown; a patch on the breast dotted with black and white; the belly mottled with light-brown and white. *Bill* with a broad black band round its middle. It is short, strong, and much compressed towards the point; upper mandible curved at the tip. *Length*, including the legs and feet, seventeen inches. Length of *bill* above 9 lines.

[178.] 1. Sterna hirundo. (Linn.) *Greater Tern.*

Genus, Sterna, Linn.
Great Tern. Penn. *Arct. Zool.*, ii., p. 524, No. 448.
Sterna hirundo. Lath. *Ind.*, ii., p. 807, sp. 15.
Great Tern (*Sterna hirundo*). Wils., vii., p. 76, pl. 60, f. 1.
Hirondelle-de-mer Pierre garin (*Sterna hirundo*). Temm., ii., p. 740.
Sterna hirundo. Bonap. *Syn.*, No. 286.

This bird breeds in the marshes from Pennsylvania up to the 57th parallel of

* In *Podiceps auritus*, the upper mandible is straight, and the *gonys* of the lower one slopes upwards to the point.—R.

latitude. Its eggs, two, or sometimes three, are deposited on a tuft of dry grass, upon sand, or among stones, and are hatched principally by the heat of the sun, the bird sitting upon them only during the night, or in cold weather. It is very clamorous when any one approaches the spot, and flies towards him, plunging close to his head, and rising again with great velocity. In these evolutions its forked tail is sometimes spread out, but more generally closed, so as to appear pointed. It feeds principally on small fish, which it picks up from shallow water, on the wing. The length of its wings and tail, and the shortness of its legs, render progression on the ground inconvenient, and it is seldom observed to alight. It passes the winter to the south of the United States.

DESCRIPTION

Of a *male* killed on the banks of the Saskatchewan, July 18, 1827.

Colour.—Upper surface of the head and the nape pitch-black. Back of the neck, back, wing coverts, and secondaries, pearl-grey, inclining to blue, the tips of the latter fading to white. The exterior web of the first primary a stripe on its inner web next the shaft, and the tips and inner margins of the others blackish-grey; this colour, glossed with shining ash-grey, on the remainder of the quills. All the quill-shafts, the rump, under eyelid, inferior plumage, and insides of the wings, white; the breast, belly, and flanks, slightly tinged with grey. Tail and its coverts pearl-grey; outer feather white exteriorly; dark-grey near its point interiorly. *Bill* orange-coloured, tipped with blackish-brown. *Legs* scarlet.

Form, typical.—*Wings* much pointed, equalling the tail in length. *Tail* deeply forked, the exterior feathers being four inches longer than the central pair, and tapering almost to a point. *Thighs* naked for seven lines. Scales of the *tarsi* delicate; their divisions not very perceptible. Middle toe, excluding its nail, shorter than the tarsus.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	16	3	Length of bill to rictus .	2	2	Length of inner toe .	0	6½
,, of tail .	6	9	,, of tarsus . .	0	11	,, of hind toe .	0	2¾
,, of wing . .	10	6	,, of middle toe .	0	9	,, of its nail .	0	1½
,, of bill above .	1	6	,, of middle nail	0	4¼		—R.	

Note.—English specimens of *Sterna hirundo* differ from the above in the outer web of the exterior tail-feather being blackish-grey; the inner webs of all the tail feathers, and the whole of their coverts, white. The blackish grey of the quills is more extended. The tarsus is more slender and two lines shorter than in the American bird. Further observation must determine whether these differences are constant. They exist in several specimens from both countries, which I have examined; and the peculiarities of the Hudson's Bay bird attracted the attention of Forster.—R.

[179.] 2. Sterna arctica. (Temm.) *Arctic Tern.*

Genus, Sterna, Linn.
Hirondelle de mer Arctique (*Sterna arctica*). Temm., ii., p. 742.
Sterna arctica. Sab. (Capt.), *Suppl. Parry's First Voy.*, p. ccii. Sab. (J.), *Frankl. Journ.*, p. 694. Richards., *Append. Parry's Second Voy.*, p. 356, No. 20. Bonap. *Syn.*, No. 287?
Eeemeet-koteillak. Esquimaux.

This species of Tern breeds very abundantly on the shores of Melville Peninsula, and on the islands and beaches of the Arctic Sea. The eggs are very obtuse at one end, and taper much at the other. They vary in colour from light yellowish-brown to bluish-grey, and are marked with many irregular brown spots of different degrees of intensity. They are deposited on a gravelly beach or upon sand, and the parent birds shew as much anxiety for their safety and boldness in defending them as the *St. hirundo*. The *Sterna arctica* is most readily distinguished from the species just named by its shorter bill and much smaller legs and feet. The comparative lengths of the *tarsi* and middle *toes* and the colours of the tail feathers, will also assist in discriminating them.

DESCRIPTION
Of a *male* killed at Great Bear Lake, June 7, 1826.

Colour.—Upper plumage as in *St. hirundo*, except that the grey does not extend so far back, but terminates at the rump which, with the tail and its coverts, is white, the outer webs alone of the two exterior pairs of tail feathers being blackish grey. *Quills* as in the *St. hirundo* *. Throat, breast, and belly, pearl-grey. Under eyelid, cheeks, chin, vent, under tail-coverts, and insides of the wings, pure white. Long axillary feathers greyish-white. *Bill* and feet scarlet, drying blood-red. In some specimens the bill is tipped with brown.

Form.—*Bill* shorter than that of *St. hirundo*. *Wings* a quarter of an inch shorter than the tail. *Tail* deeply forked, the exterior feather 3½ inches longer than the central pair. *Legs* and *feet* very small. Thighs bare nearly a quarter of an inch. The middle toe without its nail is exactly equal in length to the tarsus.

The bird of the *first year* is described as follows by Captain Sabine, from two specimens killed on the 8th of July in lat. 74°, from among a flock of full plumaged birds:—"*Bill* black, lower mandible tinged reddish; forehead, throat, neck, and inferior plumage, white, slightly tinged on the breast and belly with faint ash-colour. The cap mottled black and white; the upper plumage ash-colour, the wing coverts indistinctly mottled with brown; the outer web of the first quill velvet-black at the base, shading into ash-colour; the outer feathers of the tail exceed the middle ones in length three inches; the scapulars and secondaries tipped with white; the colour of the legs in process of change from black to red."

* The *Sterna arctica* of Bonaparte has the outer web of the first primary black.

DIMENSIONS
Of the *mature* bird.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	15	0	Length of bill to rictus .	1	9	Length of inner toe .	0	$4\frac{3}{4}$
,, of tail . .	6	10	,, of tarsus . .	0	7	,, of hind toe . .	0	$1\frac{1}{2}$
,, of wing . .	10	6	,, of middle toe .	0	7	,, of hind nail .	0	$0\frac{3}{4}$
,, of bill above . .	1	2	,, of middle nail .	0	$3\frac{1}{4}$		—R.	

[180.] 3. STERNA NIGRA. (Linn.) *Black Tern.*

GENUS, Sterna, Linn.
Black Tern. PENN. *Arct. Zool.*, ii., p. 525, No. 450.
Hirondelle de mer épouvantail (*Sterna nigra*). TEMM., ii., p. 749.
Sterna nigra (*Black Tern*). SAB., *Frankl. Journ.*, p. 695. BONAP. *Syn.*, No. 289.

This Tern is common in the interior of the fur countries on the borders of the lakes. It breeds in the swamps, and feeds chiefly on winged insects.

DESCRIPTION
Of a *male*, killed on the Saskatchewan, June 17, 1827.

COLOUR.—Head and nape velvet-black. Neck and whole under plumage to the vent black. *Back* blackish-grey, passing on the rump, tail, and wings, to pale bluish-grey. Outer web of the first quill and inner webs of the others blackish-grey; their shafts brownish-white. Outer tail feather narrowly edged exteriorly with white. Vent and under tail coverts pure white. *Bill* pitch black. *Feet* blackish-brown.

FORM.—*Bill* smaller than that of the Arctic Tern, but similar in shape. *Wings* an inch and a half longer than the tail. *Tail* short, comparatively slightly forked; outer feathers three-quarters of an inch longer than the central pair. *Thighs* bare for four lines. *Tarsi* shorter in proportion than those of *St. arctica*. The webs are abbreviated in their middles, the outer one being only $4\frac{1}{2}$ lines deep, and the inner one $3\frac{1}{2}$ lines *.

DIMENSIONS.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	11	0	Length of bill to rictus .	1	$4\frac{1}{2}$	Length of inner toe . .	0	5
,, of tail . . .	3	4	,, of tarsus . .	0	7	,, of hind toe .	0	$2\frac{1}{2}$
,, of wing . .	8	3	,, of middle toe .	0	7	,, of hind nail . .	0	$1\frac{3}{4}$
,, of bill above .	1	3	,, of middle nail .	0	7		—R.	

* A specimen in mature plumage, killed in Lincolnshire, differs merely in the black being less deep on the under plumage, and rather less extended on the upper. Form and dimensions the same.—Wilson's *Sterna plumbea* (pl. 60, f. 3) corresponds in description with the yearling birds of *St. nigra*, though the figure is not well coloured. It is singular that the thirty specimens which that author killed should all have been young birds.—R.

[181.] **1. Larus glaucus.** (Brunnich.) *Burgomaster Gull.*

Genus, Larus, Linn.
Larus glaucus (*Glaucous gull*). Sab. *Greenl. Birds*, p. 543, *Suppl. Parry's First Voy.*, p. cciii.
Goeland burgermeister (*Larus glaucus*). Temm., ii., p. 757.
Larus glacialis (*Greenland Gull*). M'Gillivray, *Wern. Trans.*, v., p. 270.
Larus glaucus (*Glaucous gull*). Richardson, *Append. Parry's Second Voy.*, p. 358.
Bonap. *Syn.*, No. 302.

This large and powerful gull inhabits Greenland, the Polar Seas, Baffin's Bay, and the adjoining straits and coasts, in considerable numbers during the summer. Its winter resorts in America have not been mentioned by authors; and the Prince of Musignano informs us, that it is exceedingly rare in the United States. It is notoriously greedy and voracious, preying not only on fish and small birds, but on carrion of every kind. One specimen killed on Captain Ross's expedition, disgorged an auk when it was struck, and proved on dissection to have another in its stomach. Unless when impelled to exertion by hunger, it is rather a shy and inactive bird, and has little of the clamorousness of others of the genus. There is a considerable variety in the size of individuals. Captain Sabine found most of his specimens smaller than the *L. marinus;* but the largest individual of either species which he met with, was a male *L. glaucus* killed in Barrow's Strait. Its length was thirty-two inches; extent of wing sixty-five inches; weight four pounds and a quarter. Its tarsus was three inches and a half long, and its bill, which was prodigiously strong and arched, measured upwards of four inches. The *eggs* of this gull are pale purplish-grey, with scattered spots of umber-brown and subdued lavender purple.

DESCRIPTION

Of a *mature* bird in *summer* plumage, killed on Sir E. Parry's second voyage.

Colour.—*Mantle* French-grey. The edge of the wing, the ends of the first primaries, and the shafts and tips of the others with all the rest of the plumage white. *Bill* wine-yellow, marked near the tip of the lower mandible with orpiment-orange. *Irides* straw-yellow. *Legs* and *feet* livid flesh-colour.

Form.—*Bill* strong with an evident angular projection near the point beneath.

In *winter* the head and neck are streaked and mottled with dull and very pale wood-brown. The *young* are streaked longitudinally on the neck with pale-brown, and the upper plumage is barred transversely with ash-grey and greyish-yellow; the tail irregularly spotted. The shafts of the primaries are white, and the spots on the webs are much paler than in the young of *L. marinus* and *argentatus*. The *bill* is horn-coloured at the base, and brownish-black at the tip. *Feet* flesh-coloured.

DIMENSIONS
Of the *old* bird.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	29	0	Length of bill to rictus	4	0	Length of middle nail	0	6½
,, of tail	10	0	,, from nostrils to tip	1	3	,, of hind toe and nail	0	5½
,, of wing	19	0	,, of tarsus	3	0	Extent of wing	62	0
,, of bill above	3	0	,, of middle toe	2	6½	Height of bill at the gonys	0	10½

—R.

[182.] 2. LARUS ARGENTATOIDES. (Bonap.*) *Arctic Silvery Gull.*

GENUS, Larus, LINN.
Larus argentatus. RICHARDS. *Append. Parry's Second Voy.*, p. 358, No. 22.
Larus argentatoides. BONAP. *Syn.*, No. 299.
Nooya. ESQUIMAUX.

The Prince of Musignano has distinguished this Gull from *Larus argentatus*, with which it had been confounded by most other writers. It is impossible, therefore, to separate its history, or to cite the descriptions of other authors correctly. It was found breeding on Melville Peninsula. The eggs that were brought home have an oil-green colour, marked with spots and blotches of blackish-brown and subdued purplish-grey. It preys much on fish, and is noted at Hudson's Bay for robbing the nets set in the fresh-water lakes. I have seen no specimens from Arctic America which I can unequivocally refer to the *Larus argentatus* as characterized by the Prince of Musignano.

DESCRIPTION
Of a *male*, in the Ed. Mus., killed on Melville Peninsula, June 29, 1822.

COLOUR.—*Mantle* pearl-grey. *Six outer quills* crossed by a brownish-black band, which takes in nearly the whole of the first one, but, becoming rapidly narrower on the others, terminates in a spot near the tip of the sixth. The first quill has a white tip an inch and a half long, marked interiorly with a brown spot; the second has a round white spot on its inner web, and, together with the rest of the quill feathers, is tipped with white. Head, neck, rump, tail, and all the *under plumage*, pure white. *Bill* wine-yellow, with an orange-coloured spot near the tip of the under mandible. *Irides* primrose-yellow. *Legs* flesh-coloured.

FORM.—*Bill* moderately strong, compressed; *upper mandible* arched from the nostrils. *Nostrils* oblong-oval. *Wings* about an inch longer than the tail. *Thighs* naked for three-quarters of an inch. *Hind toe* articulated rather high.

The *young* have the upper plumage hair-brown, with reddish-brown borders; the head and under plumage grey, thickly spotted with pale-brown; the tail mostly brown, tipped with white.

* The Prince of Musignano doubts whether his bird be the same with Brehm's *L. argentatoides*, and we have no means of deciding the point.—R.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	23	0	Length from nostrils to tip .	0	11	Length of inner toe .	1	6
,, of tail . .	7	3	,, of nostrils . .	0	4½	,, of inner nail . .	0	4
,, of wing .	16	6	,, of tarsus . .	2	4½	,, of hind toe .	0	3
,, of bill above .	2	0	,, of middle toe .	2	1	,, of hind nail . .	0	2½
,, of bill to rictus .	3	0	,, of middle nail .	0	5			

Six individuals, killed on Melville Peninsula, in June, July, and September, varied in total length from 23 to 25 inches, and in the length of their tarsi from 27 to 31 lines.—R.

[183.] 3. Larus leucopterus. (Faber.) *White-winged Silvery Gull.*

Genus, Larus, Linn.
Larus argentatus. Sab. *Birds of Greenl.*, p. 546.
Larus arcticus. Macgillivray, *Wern. Trans.*, v., p. 268.
" Larus glaucoides. Temm."
Larus leucopterus. Bonap. *Syn.*, No. 301.

During Captain Ross's and Sir Edward Parry's first voyages, many specimens of this Gull were obtained in Davis's Straits, Baffin's Bay, and at Melville Island. Temminck, to whom they were communicated, considered it at first to be merely an Arctic variety of *L. argentatus;* and, in deference to his authority, it was described as such by Captain Sabine. Both he and other ornithologists have, however, since that time, published it as a distinct species under different appellations, the one which we have selected having the priority. The plumage of *L. leucopterus* differs little from that of *L. glaucus;* but the great superiority of the latter bird in point of size is sufficient to distinguish the species.—R.

description.

Colour.—*Mantle* pearl-grey; quills fading to white, their shafts pure white, as well as the rest of the plumage. *Bill* wine-yellow, with an orange-coloured spot near the tip of the lower mandible. *Feet* flesh-coloured.

Form.—*Bill* compressed, deep; upper mandible considerably longer than the under one. *Nostrils* narrowly pyriform. *Wings* equal to the even tail*.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	26	0	Length of tarsus . .	2	6	Length of middle nail .	0	5
,, of bill above .	2	6	,, of middle toe .	2	1	Extent of wing . .	50	0

* This description is compiled from Mr. Macgillivray's account, above quoted,—no specimens having been obtained on Sir John Franklin's Expeditions, and Sir E. Parry's not being at hand.—R.

[184.] 4. Larus eburneus. (Linn.) *Ivory Gull.*

Genus, Larus, Linn.
Ivory Gull. Penn. *Arct. Zool.*, ii., p. 529, No. 457.
Larus eburneus. (*Ivory Gull*). Sab. *Greenl. Birds*, p. 548, No. 21; *Suppl. Parry's First Voy.*, p. cciv., No. 18.
Mouette blanche où senateur (*L. eburneus*). Temm., ii., p. 769.
Larus eburneus. Bonap. *Syn.*, No. 297.

This beautiful Gull frequents Davis's Straits, Baffin's Bay, and various parts of the northern shores of the American continent. We observed it breeding in great numbers on the high perforated cliffs which form the extremity of Cape Parry, in latitude 70°. It attends the whale fishery to prey on blubber*.

DESCRIPTION.

Colour of the *mature* bird pure white. *Bill* wax-yellow at the base, ochre-yellow towards the point. *Orbits* red. *Irides* brown. *Legs* and *feet* black.

Form.—*Bill* rather stout, the *gonys* forming a distinct angle beneath; commissure curved only near the point. *Wings* an inch and a half longer than the even tail; first quill longest, second almost equal to it. Naked part of the thigh very short (less than half an inch above the centre of the joint). *Webs* rather short. Hind toe and nail stout, short; *inner toe* short.

An *immature bird*, killed at Hudson's Bay, has the region of the bill, lores, and chin, blackish-grey; a few scattered spots of blackish-brown on the wing coverts and scapulars, with bars of the same on the end of the tail and tips of the quills. The *bill* blackish, tipped with horn colour. *Legs* black.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	18	0	Length from nostrils to tip	0	7½	Length of inner toe	0	10½
,, of tail	6	0	,, of tarsus	1	6½	,, of its nail	0	4
,, of wing	13	0	,, of middle toe	1	4	,, of hind toe	0	1½
,, of bill above	1	3	,, of middle nail	0	5	,, of hind nail	0	2
,, of bill to rictus	2	2						

—R.

* Mr. Hutchins describes a pure white Gull, which breeds on the Albany River, as larger than our Ivory Gull, being twenty-seven inches and a half in length, five feet from tip to tip of the wings, and weighing two pounds. Its bill and legs are flesh-coloured. It lays four white eggs on the ground; and the young, which are blackish, do not attain their full plumage until they are three years old. It feeds on fish.—Although the Ivory Gull, in common with others of the genus, varies considerably in size, I have met with none which attain the magnitude of Mr. Hutchins's bird, which, if it prove on examination to be distinct, deserves the name of *Larus Hutchinsii*. The Gull described by Capt. Sabine in his Memoir on the Greenland Birds, p. 545, was probably an example of Mr. Hutchins's species.—R.

[185.] 5. Larus canus. (Linn.) *Mew, or Common Gull.*

Genus, Larus, Linn.
Mouette à pieds bleus (*Larus canus*). Temm., ii., p. 771.

Ch. Sp. Larus canus, *rostro valdè compresso abbreviato, tarso bi-unciali, alis caudam superantibus; remigibus cum rachidibus apicem versus nigrescentibus et spatio albo duorum exteriorum magno.*

Sp. Ch. Mew Gull, with a short, considerably compressed bill; tarsus two inches long; wings longer than the tail; the quills and their shafts blackish towards the ends; a large white space on the two first.

This Gull breeds in Arctic America, and retires to the southward when the winter sets in. Our specimen, in full breeding plumage, agrees in colour with a mature British *L. canus;* but its size is rather greater, and the bill somewhat longer and more decidedly arched at the point. These differences are, probably, to be attributed to its greater age, and can scarcely be considered as denoting a specific distinction.

DESCRIPTION

Of a *male*, killed at Great Bear Lake, June 7, 1826.

Colour.—Mantle and wings pearl-grey; the *first six quills* pitch-black towards their ends; that colour extending to the base of the first, but forming merely a narrow bar on the sixth: the first and second have a long white space (more than an inch and a half in length) near their tips; the others, the lesser quills, and scapulars, are conspicuously terminated with white. Shafts of the two or three exterior quills pitch-black. Head, neck, shoulders, rump, tail, and whole *under plumage*, white. *Bill* wax-yellow, tipped with gamboge. *Legs* blackish-grey, blotched with yellow on the webs.

Form.—*Bill* considerably compressed. *Wings* two inches longer than the tail. *Thighs* an inch bare.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	19	0	Length of bill to rictus	2	2½	Length of middle nail	0	4
,, of tail	5	9	,, from nostrils to tip	0	9	,, of inner toe	1	2
,, of wing	14	0	,, of tarsus	2	1	,, of hind toe	0	2
,, of bill above	1	4¾	,, of middle toe	1	7½	,, of hind nail	0	1½

—R.

* Our bird does not correspond with the character given by the Prince of Musignano of his *Larus canus* (*Syn.*, No. 296), "quills black at the point," though it agrees in the length of the tarsus and other marks.—R.

[186.] 6. Larus zonorhynchus. (Richards.) *Ring-billed Mew-Gull.*

Genus, Larus, Linn.

Ch. Sp. Larus zonorhynchus, *tarso 2½ uncias longo rictum rostri robusti torquati vix æquante, dorso alisque elongatis perlaceo-griseis, remigibus apicem versus cum rachidibus nigrescentibus; spatio albo duorum exteriorum abbreviato.*

Ch. Sp. Ring-billed Mew-Gull, commissure of the stout, ringed bill rather longer than the tarsus, which measures 2½ inches; mantle pearl-grey; ends of the quills and their shafts blackish; a short white space on the two exterior ones.

This Gull, which breeds in considerable numbers in swampy places on the banks of the Saskatchewan, bears a close resemblance to our *L. canus*. Its plumage is precisely the same, except that the white spaces near the ends of the first and second quill feathers are one-half shorter, and in some specimens there is none at all on the second*. It differs, however, remarkably in the size of the *bill*, which approaches that of *L. argentatoides*, being much wider at the base, more rounded on the ridge, and stronger every way than that of *L. canus*: it has a conspicuous salient angle beneath, and is of a dutch-orange colour, with a blackish ring near its tip. The *wings* are two inches longer than the tail. It is a smaller species than *Larus argentatoides* of Bonaparte, and its nostrils are shaped like those of *L. canus*.

Dimensions

Of a *male*, killed on the Saskatchewan, June 7, 1827.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	22	0	Length from nostrils to tip	0	9½	Length of middle nail	0	4½
,, of tail	6	0	,, of naked thigh	1	3	,, of inner toe	1	3½
,, of wing	15	3	,, of tarsus	2	5	,, of hind toe	0	2
,, of bill above	1	9	,, of middle toe	1	9	,, of hind nail	0	2
,, of bill to rictus	2	7						

Another *male* is an inch shorter, and has a tarsus only two inches two lines long; a third is of intermediate dimensions. —R.

* As in *L. canus*, all the quills have their extreme tips white, that of the first being a mere speck; but of the others, larger as they are more posterior. One specimen has, in addition, two small white spots near the tip of the second quill feather. The markings on the quills of the Gulls vary with age, and can scarcely be used as specific distinctions; but they serve to assist in the diagnosis when taken in conjunction with the size and forms of the bill and other members.—R.

[187.] 7. Larus brachyrhynchus. (Richards.) *Short-billed Mew-Gull.*

Genus, Larus, Linn.

Ch. Sp. Larus brachyrhynchus, *rostro abbreviato crassiusculo, tarso vix bi-unciali, remigibus apice concoloribus; spatio albo duorum exteriorum abbreviato: rachidibus nigrescentibus.*

Sp. Ch. Short-billed Mew-Gull, with a short, thickish bill; a tarsus scarcely two inches long; quills not tipped with white; a short white space on the two exterior ones, and blackish-shafts.

Our specimen of this Gull is a female, killed on the 23rd of May, 1826, at Great Bear Lake. Some brown markings on the tertiaries, primary coverts, and bastard wing, with an imperfect sub-terminal bar on the tail, point it out as a young bird, most probably commencing its second spring. The rest of its plumage corresponds with that of *L. zonorhynchus*, except that it wants the extreme white tips of the quill feathers, which on the third and following ones are very conspicuous in *L. zonorhynchus*. It differs, however, remarkably in its bill being shorter, though considerably stouter than that of our *L. canus*, and, like it, it is wax-yellow, with a bright yellow *rictus* and point. Its tarsus is nearly one-third shorter than that of *L. zonorhynchus*.—Many may be disposed to consider this and the two preceding Gulls as merely local varieties of *L. canus;* and it might be urged, in support of this opinion, that there are considerable differences in the length and thickness of the bills of individuals of the common and winter Gulls killed on the English coasts, which are all usually referred to *L. canus*. We have judged it advisable, however, to call the attention of ornithologists to these American birds, by giving them specific names, leaving it to future observation to determine whether they ought to retain the rank of species or be considered as mere varieties.

Dimensions.

Of a *female*, killed in lat. 65°, May 23.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	19	0	Length of bill to rictus	2	0	Length of inner toe	1	2
,, of tail	5	9	,, of tarsus	1	11	,, of hind toe	0	2
,, of wing	13	6	,, of middle toe	1	5½	,, of its nail	0	2
,, of bill above	1	3	,, of middle nail	0	4			

—R.

[188.] 8. Larus tridactylus. (Lath.) *The Kittiwake.*

Genus, Larus, Linn.
Kittiwake. Penn., *Arct. Zool.*, ii., p. 529, No. 456; *Suppl.*, p. 70, winter.
Larus rissa. Idem, *Suppl.*, p. 70.
Tarrock (*Larus tridactylus*). Idem, p. 533, D.
Mouette tridactyle (*Larus tridactylus*). Temm., p. 774.
Larus tridactylus (*Kittiwake-Gull*). Sab. *Greenl. Birds*, p. 549, No. 22; *Suppl. Parry's First Voy.*, p. ccv., No. 19. Sab. (J.) *Frankl. Journ.*, p. 695. Richards. *App. Parry's Second Voy.*, p. 359.

The Kittiwake abounds in the interior of the fur-countries, on the coasts of the Pacific, and also on the shores of the Arctic Seas, where it breeds. The young appear in considerable numbers in the autumn, on the muddy coasts of Hudson's Bay, after which they retire to the southward. Its food consists of small fish and marine and fresh-water insects.

DESCRIPTION

Of a *mature* specimen, killed on Melville Peninsula, in July.

Colour.—*Mantle* bluish-grey; ends of the *five exterior quills* and outer web of the *first* black; the fourth and fifth have small white tips. Head, neck, rump, tail, and whole *under plumage*, white. *Bill* yellowish. *Orbits* and inside of the mouth orange-coloured. *Legs* blackish.

Form.—*Tail* two inches longer than the wings. The *hind toe* replaced by a minute projection, covered with warty scales like those on the posterior part of the tarsus, and destitute of a nail. All the toes slender.—R.

"In *winter* the hind head and neck are french-grey, and the plumage between the eye and bill is finely streaked with black."—"The *young* have the above winter dress, with additional differences: the bill is black instead of yellow; at the back of the neck the feathers are tipped with black, forming a narrow crescentic patch; a black band crosses the tips of the wing coverts; primary quills black, with more or less of the inner webs in different specimens white; tail tipped for half an inch with black, except the outer feather on each side, having only a spot on the inner web."—*Capt. Sabine.*

Dimensions
Of the mature specimen.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	15	6	Length of bill to rictus	2	3	Length of middle toe	1	5
,, of tail	5	4	,, from nostrils to tip	0	8	,, of its nail	0	4¼
,, of wing	12	0	,, of naked thigh	0	5	,, of inner toe	1	0½
,, of bill above	1	4½	,, of tarsus	1	4	,, of its nail	0	3

—R.

[189.] 9. Larus Franklinii. (Nobis.) *Franklin's Rosy Gull.*

Genus, Larus, Linn.

Larus atricilla (*Laughing Gull*). Sab. *Frankl. Journ.*, p. 695 *; detailed description.

Ch. Sp. Larus Franklinii, *rostro pedibusque miniatis, dorso alisque perlaceo-cinereis, remigibus quinque exterioribus nigro latè fasciatis: apice remigis prioris unciali albo, tarso viginti lineas longo;—cucullo æstate nigro.*

Sp. Ch. Franklin's Rosy Gull, with vermilion bill and feet; mantle pearl-grey; five exterior quills broadly barred with black, the first one tipped with white for an inch; tarsus twenty lines long;—hood black in summer.

Plate lxxi.

This is a very common Gull in the interior of the fur-countries, where it frequents the shores of the larger lakes. It is generally seen in flocks, and is very noisy. It breeds in marshy places. Ord's description of his Black-headed Gull (Wils., ix., p. 89) corresponds with our specimens, except that the conspicuous white end of the first quill is not noticed: the figure (pl. 74, f. 4) differs in the primaries being entirely black †. The Prince of Musignano gives the totally black primaries, and a tarsus nearly two inches long, as part of the specific character of his *L. atricilla,* to which he refers Wilson's bird; though, in his *Observations*, he states that the adult specimens have the primaries, with the exception of the first and second, tipped with white. *L. Franklinii* cannot be referred either to the *L. atricilla* or *L. melanocephalus* of M. Temminck: the first has a *lead-coloured hood* and deep black quill feathers, untipped by white; and the *black* hood of the second does not descend lower on the throat than on the nape; its quill feathers are also differently marked, and its tarsus is longer. His *L. ridibundus* and *capistratus* have brown heads, and the interior of the wings grey; the latter has also a much smaller bill than our *L. Franklinii.*—R.

DESCRIPTION

Of a *male*, killed, June 6, 1827, on the Saskatchewan.

Colour.—Both eyelids, the neck, rump, tail, and whole *under plumage*, white, the latter and interior of the wings deeply tinged with peach-blossom-red. Black *hood* covering three-quarters of an inch of the nape, and extending as much lower on the throat. *Mantle* and wings bluish-grey. The outer web of the first quill feather is black to near the tip, and a broad band of the same crosses the ends of the five outer primaries: all the quill feathers are terminated with white, that on the first primary and of all the secondaries being upwards of

* Mr. Sabine observes that this is the *L. atricilla* of Linnæus, but not of Temminck.—R.

† Four American specimens of *L. atricilla* are now before me. It is a larger and a totally different species. The three outer quills are wholly black; the fourth tipped for about an inch, and the fifth for half an inch, with black: the extreme white spot at the point of the five first quills is very small in some, and not seen in adult specimens, having these feathers worn.—Sw.

LARUS FRANKLINII.

London Printed for John Murray Bookseller to the Admiralty Jan.y 1.st 1831

an inch long*: all the shafts whitish. *Bill* and *legs* vermilion, the former obscurely barred near the tip.

Form.—*Bill* rather stout, curved from the nostrils, with the *gonys* forming an evident salient angle: its depth equal to twice its breadth. *Wings* an inch and a half longer than the perfectly even tail. *Thighs* an inch bare.

A *female* and another male, killed at the same place six weeks later in the season, correspond minutely with the above.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	17	0	Length of bill to rictus .	1	11	Length of inner toe . .	1	0
,, of tail . .	4	6	,, of tarsus . .	1	8	,, of hind toe .	0	3
,, of wing .	11	0	,, of middle toe .	1	3	,, of hind nail . .	0	2
,, of bill above . .	1	5	,, of its nail . .	0	4¼			

—R.

[190.] 10. Larus Bonapartii. (Nobis.) *Bonapartian Gull.*

Genus, Larus, Linn.
Akesey-keask. Cree Indians.

Plate lxxii.

Ch. Sp. Larus Bonapartii, *rostro gracili nigro intus pedibusque puniceis, palliolo perlaceo-cinereo, alis antice latè albo marginatis, remigibus sex nigro terminatis apiculis albis; remige primo extus toto nigro, tarso sub sesquiunciali.—cucullo æstate nigro.*

Sp. Ch. Bonapartian gull, with a black bill; the mouth and feet carmine-red; wings bordered with white anteriorly: posteriorly, together with the back, pearl-grey; six exterior quills black at the end, slightly tipped with white: the first quill entirely black exteriorly; tarsus scarcely an inch and a half long.—Head greyish-black in summer.

This handsome small gull is common in all parts of the fur countries, where it associates with the Terns, and is distinguished by its peculiar shrill and plaintive cry. The *L. capistratus* of the Prince of Musignano (*Syn.*, No. 293) differs, according to his description, in the first quill being white exteriorly, pale-ash interiorly, in the light-brown colour of its hood, and in its tail being slightly emarginated, while the tail of *L. Bonapartii* is even more inclined to be rounded laterally than notched in the middle.

Description

Of a *male*, killed at Great Slave Lake, May 26, 1826.

Colour.—Neck, tail coverts, tail, whole under plumage and interior of the wings pure white. *Hood* greyish-black, extending half an inch over the nape, and as much lower on the throat. *Mantle* pearl-grey, this colour extending to the tips of the tertiaries, secondaries, and two posterior primaries. The anterior border of the wing is white from its shoulder

* The extent of black on the second quill is greatest, measuring two inches; it diminishes gradually on the three succeeding ones, and all these have small white tips.—R.

for the breadth of four greater primary coverts. The exterior web of the outer primary, and the ends of the first six are deep black *, most of them slightly tipped with white, the seventh and eighth are merely blotched with black on their tips. The inner web of the first primary, and the outer webs of the three following ones, with their shafts, are pure white. *Bill* shining black. Inside of the *mouth* and *legs* bright carmine-red. *Irides* dark brown.

Form.—*Bill* slender and nearly straight, conspicuously notched at the tip. It is much compressed at the point, but its breadth at the base exceeds its depth. *Wings* two inches longer than the tail, which is very slightly rounded laterally.

The *female* is a little smaller. A number of specimens killed between the 20th of May and 5th of July, agree exactly with the preceding. One killed on the 20th of May has the exterior web of its second quill broadly edged with black for half its length. A *young male*, and also a *female* (one year old?), killed June 4, have clove-brown markings on the bastard wing, middle rows of the coverts, and tips of the secondaries and tertiaries; the white exterior border of the wing and the black markings on the quills are the same as in the old bird. The head is white with the bases of the feathers deeply tinged greyish-black; the end of the tail brown. *Bill* black. *Legs* flesh-coloured.

A young bird in its *first plumage*, killed in the end of August, has the crown of the head, back of the neck, scapulars and interscapulars, greyish-brown with paler tips. Middle of the wing and tertiaries blackish-brown, the tips lighter; bastard wing and primary coverts blotched with the same. Throat and upper part of the breast faintly tinged with buff. Rest of the plumage nearly as in the bird of one year. *Bill* brownish; pale at the base beneath. *Legs* clay-coloured.

Dimensions.

	Mature Bird.		One yr. old?		Yearling.	
	Inch.	Lin.	Inch.	Lin.	Inch.	Lin.
Length, total	15	6	15	3	15	0
,, of tail	4	3	4	0	4	6
,, of wing	10	0	10	0	9	0
,, of bill above	1	3	1	2	1	1½
,, of bill to rictus	1	10	1	8½	1	8
,, of tarsus	1	5¼	1	4½	1	4½
Length of middle toe	1	2¾	1	1¾	1	1½
,, of its nail	0	3	0	2¾	0	2¾
,, of inner toe	0	11¾	0	11	0	11
,, of hind toe	0	2½	0	2½	0	2¼
,, of its nail	0	1	0	1	0	1

—R.

[191.] **11. Larus minutus.** (Pallas.) *Little Gull.*

Genus, Larus, Linn.
Mouette Pygmée (*Larus minutus*). Temm., ii., p. 787.
Larus minutus (*Little gull*). Sab. *Frankl. Journ.*, p. 696.

A specimen obtained on Sir John Franklin's first expedition, was determined by Mr. Sabine to be a young bird of the first year of this species, exactly according with M. Temminck's description. We have not that specimen to describe, and none was procured on the second expedition.

* The extent of black on the ends increases gradually from the first to the fourth, on which it measures above an inch, diminishing again in the following ones.—R.

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[192.] 12. Larus Rossii. (Richardson.) *Cuneate-tailed Gull.*

Genus, Larus, Linn.

Larus Rossii (*Cuneate-tailed Gull*). Richards., *App. Parry's Sec. Voy.*, p. 359, An. 1825.
Ross, *Parry's Third Voy.*, p. 195, An. 1828.
Larus roseus*. Jardine and Selby, *Orn. Illust.*, p. i. pl. xiv., An. 1828.
Larus Rossii. Wilson, *Illustr. of Zool.*, i., pl. viii.

Ch. Sp. Larus Rossii, *dorso alisque caudam cuneatam superantibus perlaceo-griseis, remige primo extus nigrescenti, rostro gracili nigro, tarsis unicalibus pedibusque miniatis.*

Sp. Ch. Cuneate-tailed gull, with a pearl-grey mantle. Wings longer than the cuneiform tail. The outer web of the first quill feather blackish; a slender black bill; tarsi an inch long, and, as well as the feet, vermilion-red.

Two specimens of this gull were killed on the coast of Melville Peninsula, on Sir Edward Parry's second voyage, one of which is preserved in the Museum of the University of Edinburgh, and the other was presented to Joseph Sabine, Esq. No other examples are known to exist in collections; but Commander Ross, in his Zoological Appendix to Sir Edward Parry's narrative of his most adventurous boat voyage towards the Pole, relates that several were seen during the journey over the ice north of Spitzbergen, and that Lieutenant Forster also found the species in Waygate Straits, which is probably one of its breeding-places. It is to Commander Ross, who killed the first specimen which was obtained, that the species is dedicated, as a tribute for his unwearied exertions in the promotion of natural history on the late Arctic voyages, in all of which he bore a part. Of the peculiar habits or winter retreat of the species nothing is known.

DESCRIPTION

Of a specimen, killed, June 1823, at Alagnak, Melville Peninsula, lat. 69¼ N.

Colour.—Scapulars, interscapulars, and both surfaces of the wings clear pearl-grey; outer web of the first quill blackish-brown to its tip, which is grey; tips of the scapulars and lesser quills whitish. Some small feathers near the eye and a collar round the middle of the

* The multiplication of synonymous names for the objects of natural history has been often deservedly reprobated as creating a barrier to the advancement of the science, and it may be considered as peculiarly unfortunate that a bird of which only two examples have reached Europe, should already have been figured under two distinct appellations. With the view of relieving myself from the charge of having been accessory to this error, and still more from a wish that the species should continue to bear the name of the meritorious officer and naturalist who first discovered it, I have ventured to trouble the reader with the following brief detail.—The specimens of Zoology obtained on Sir Edward Parry's second voyage, being placed by that officer in my hands, I drew up, at his request, a paper on the subject for the Appendix to his Narrative. In that paper, which was read before the Wernerian Society in January 1824, the name of *Larus Rossii* was given to this gull, the specimen being at the same time exhibited, and afterwards deposited, by the directions of the Lords Commissioners of the Admiralty, in the Edinburgh University Museum. The Appendix was published in 1825 during my absence in America. Mr. M'Gillivray, Assistant Keeper of the Museum, in a paper on the genus Larus, read before the Wernerian Society in February 1824, and afterwards published in the Transactions of that body, having occasion to allude to the cuneate form of the tail of this gull, designates it, "*pro tempore*," by the name of *L. roseus*. This name of *roseus* has been adopted in the Ornithological Illustrations of Jardine and Selby, wherein Mr. M'Gillivray is cited as the first *describer* of the bird; but his description is not quoted, nor have I been able to learn in what work it appeared.—R.

neck pitch-black. Rest of the plumage white, the neck above and the whole *under plumage* deeply tinged with peach-blossom red in recent specimens. *Bill* black; its rictus and the edges of the eyelids reddish-orange. *Legs* and *feet* vermilion red; nails blackish.

Form.—*Bill* slender, weak, with a scarcely perceptible salient angle beneath; the upper mandible slightly arched and compressed towards the point; the commissure slightly curved at the tip. *Wings* an inch longer than the decidedly cuneiform *tail* *. *Tarsi* rather stout; the thumb very distinct, armed with a nail as large as that of the outer toe.

The other specimen killed by Mr. Sherer a few days later, differs only in the first primary coverts having the same dark colour with the outer web of the first primary itself.

Dimensions

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	14	0	Length of bill above .	0	9	Length of tarsus . .	1	1
,, of tail . .	5	6	,, of bill to rictus .	1	3	,, of middle toe .	0	10½
,, of wing .	10	6	,, from nostrils to tip	0	4½	,, of middle nail .	0	3

—R.

[193.] **13. Larus Sabinii.** (J. Sabine.) *Fork-tailed Gull.*

Genus, Larus, Linn.
Larus Sabinii. Sab. (J.), *Linn. Trans.*, xii., p. 520, pl. 29. Sab. (Capt.), *Greenl. Birds*, p. 551, No. 23. Richards. *App. Parry's Second Voy.*, p. 360, No. 25.
Xema Sabinii. Leach. *Ross, Voy., App.*, p. lvii.
Erkeet-yuggee-arioo. Esquimaux.

This interesting species of gull was discovered by Captain Edward Sabine. It was first seen on the 25th of July at its breeding station on some low rocky islands, lying off the west coast of Greenland, associated in considerable numbers with the Arctic Tern, the nests of both birds being intermingled. It is analogous to the Tern not only in its forked tail, and in its choice of a breeding place, but also in the boldness which it displays in the protection of its young. The parent birds flew with impetuosity towards persons approaching their nests, and when one was killed its mate, though frequently fired at, continued on the wing close to the spot. They were observed to get their food on the sea-beach, standing near the water's edge, and picking up the marine insects which were cast on shore. A solitary individual was seen in Prince Regent's Inlet, on Sir Edward Parry's first voyage, and many specimens were procured in the course of the second voyage on Melville Peninsula. Captain Sabine also killed a pair at Spitzbergen, so that it is a pretty general summer visiter to the Arctic Seas,

* The central tail feathers are an inch longer than the outer ones.—R.

and is entitled to be enumerated amongst the European as well as the American birds. It arrives in the high northern latitudes in June, and retires to the southward in August. Specimens procured in June and July corresponded exactly with the one described below. When newly killed they had all a delicate pink blush on their under plumage. The eggs, two in number, are deposited on the bare ground, and are hatched in the last week of July. They are an inch and a half in length, and have an olive colour with many brown blotches.

DESCRIPTION.

Colour.—Head and upper part of the throat blackish-grey, bounded by a velvet-black collar. *Mantle* bluish-grey. The anterior border of the wing, primary coverts, and first five primaries pitch-black, the latter broadly bordered anteriorly with white nearly to their tips. The rest of the primaries *, the greater part of the secondary coverts, the ends of the secondaries, tips of the tertiaries and scapulars, with the neck, tail, and whole under plumage, pure white. *Bill* black, with a yellow tip. Inside of the *mouth* and edges of the *eyelids* vermilion-red. *Irides* black. *Legs* and *feet* black.

Form.—*Bill* with the upper mandible a little curved at the point, and a conspicuous salient angle on the lower one. It is much smaller than the bills of *L. ridibundus* and *L. tridactylus*, but twice as stout as that of *L. Rossii*. The wings are an inch longer than the tail, which is forked about an inch deep. The nail of the hind toe is very small.

The *winter* plumage, and that of the *young* are still unknown.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	13	6	Length of naked thigh	0	9	Length of inner nail	0	2
,, of tail	5	0	,, of tarsus	1	4	,, of hind toe	0	1½
,, of wing	11	0	,, of middle toe	1	0½	,, of its nail	0	0½
,, of bill above	1	0	,, of middle nail	0	2	Depth of fork of tail	1	0
,, of bill to rictus	1	6	,, of inner toe	0	9½	Weight	7 oz.	

—R.

[194.] **1. Lestris pomarina. (Temm.)** ***Pomarine Jager.***

Genus, Lestris, Illig.
Stercoraire pomarine (*Lestris pomarina*). Temm., ii., p. 793.
Lestris pomarina (*Pomarine lestris*). Sab. *Suppl. Parry's First Voy.*, p. ccvi., p. 22.
Richards. *Append. Parry's Second Voy.*, p. 361, No. 26.
Esquimaux Keask. Hudson's Bay Residents.

The Pomarine Jager or Gull-hunter is not uncommon in the Arctic seas and northern outlets of Hudson's Bay, where it subsists on putrid fish and other

* The sixth primary varies, its whole outer web being black in some birds; in others merely brownish at its base.—R.

animal substances thrown up by the sea, and also on the matters which the Gulls disgorge when pursued by it. It retires from the north in the winter, and makes its first appearance at Hudson's Bay in May, coming in from seaward. The Indians abhor it, considering it to be a companion of the Esquimaux, and to partake of their evil qualities.

DESCRIPTION

Of a *male*, killed in the Welcome, lat. 66°, in June.

Colour.—Head, neck, under eyelid, a patch at the corner of the mouth, back, wings, and tail, brownish-black; flanks and sides of the breast blotched with the same. Shafts of the quill and tail feathers white, except at their tips. Neck straw-yellow. Auriculars, chin, throat, breast, and belly, white. Vent and under tail coverts blackish-brown. *Bill* dark-brown, tipped with black. *Legs* black.

Form.—Plumage of the nape long, tapering, and acute. *Tail* slightly rounded, independent of the middle pair of feathers, which project three inches. These latter retain their breadth throughout, are rounded at the tip, and are twisted so that their vanes incline obliquely towards each other. *Tarsus* covered posteriorly by rough, angular scales, resembling those of some pine-cones; anteriorly, the lower two-thirds are acute, and are covered by strong keeled scales, very different from those of *L. parasitica*, in which the anterior scales resemble those of a Gull.

Dimensions

Of the *mature male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	21	0	Length of wing .	15	0	Length of middle toe .	1	7
,, excluding central tail feathers .	18	0	,, of bill above .	1	7	,, of middle nail .	0	5
			,, of bill to rictus .	1	10	,, of inner toe .	1	0½
,, of central tail feathers . .	9	6	,, of naked thigh .	0	10	,, of hind toe .	0	2
			,, of tarsus . .	2	0½	,, of hind nail .	0	3¼

—R.

[195.] 2. Lestris parasitica. (Temm.?) *Arctic Jager*.

Genus, Lestris, Illig.
The Arctic Bird. Edw., pl. 148*?
Lestris parasitica. Sab., *Greenl. Birds*, p. 551, No. 24; *Suppl. Parry's First Voy.*, p. ccvi., No. 21.
Sab. (J.) *Frankl. Journ.*, p. 697. Richards. *App. Parry's Second Voy.*, p. 361, No. 27.
Lestris parasitica. Temm., p. 796?
Lestris Buffonii. Bonap. *Syn.*, No. 306? (*Vide* p. 433 of this work.)
Issunak. Esquimaux.

Ch. Sp. L. parasitica, *fulignea, collo pectoreque stramineis, apicibus rectricum mediorum gracillimis elongatis acutis, tarsis sesquiuncialibus subasperis flavescentibus.*

Sp. Ch. Arctic Jager, blackish-brown; neck and breast straw-yellow; middle tail feathers terminating in long, slender, sub-linear, acute points; *tarsi* an inch and a half long, slightly rough, yellowish.

This Jager inhabits the Arctic sea-coasts of America and Europe in the

* In the colour of the plumage and legs, and most of the dimensions, our bird agrees with Edwards's figure, the

summer, migrating to the more temperate parts in winter. Numerous specimens were brought home by the late Expeditions from Melville Peninsula, the North Georgian Islands, Baffin's Bay, and Spitzbergen. It resembles the *Lestris pomarina* in its manners.

DESCRIPTION

Of a *male*, killed on Melville Peninsula, June 17, 1822, and now in the Ed. Mus.

Colour.—Crown, nape, quills, and tail, pitch-black; back, scapulars, and lesser wing coverts, blackish-brown, with a tinge of grey; shafts of the tail and quills whitish, except on their tips. Head beneath the level of the eye, neck above and below, and breast, straw-yellow. Anterior part of the belly whitish; posterior part, flanks, and under tail coverts, brownish-grey: interior of the wing blackish-grey. *Bill* livid; its tip, the knee joints, and feet, blackish. *Tarsi* largely blotched with yellow.

Form.—*Bill* having a straight commissure to past the nostrils, when it is curved in both mandibles; edges of the upper mandible obsoletely notched. *Wings* longer than the lateral tail feathers. *Tail* rounded, exclusive of the middle pair of feathers, which are nearly an inch wide at the base, and taper gradually to within three inches of their tip; thence they are narrowly linear or slightly tapering, the extreme tip becoming suddenly acute; they project half a foot beyond the others. *Tarsus* slender, protected anteriorly by crescentic *scutelli;* reticulated behind with minute conical and rather acute scales.

The *female* has precisely similar plumage.—A *nestling*, from Melville Peninsula, having the head and neck still clothed with blackish-grey down, has the rest of the plumage blackish-brown, margined on the back with light yellowish-brown, and transversely barred on the belly with dull white. The wings and tail are brownish-black, without spots. The legs, posterior parts of the webs, and toes, dull yellow. The tail is rounded, th ecentral feathers not projecting.

A specimen, from Hudson's Bay, in the British Museum, is exactly similar to the *old male* described above; while another specimen, in the same museum, brought from Baffin's Bay by Captain Ross, corresponding nearly in dimensions and in the colour of its plumage (except that there is some white on the under tail coverts, as is usual in the younger birds), differs in the bill being less curved, the curve of the commissure commencing considerably before the nostrils, and in the posterior scales of the tarsus being considerably smoother. The middle tail feathers are a quarter of an inch wider at the base, and the narrow ends shorter,—probably the less mature state of the plumage.

A *British specimen*, also in the same museum, similar to the Melville Peninsula one in plumage and colour of the bill and legs, differs in being of rather smaller dimensions, and in

only difference being the greater length—of "*near* two inches,"—which he assigns to the tarsus in the text, and its much greater roughness. Notwithstanding this discrepancy, however, the general resemblance of his figure to the specimen from the same locality in the British Museum, leads us to suspect that it may be intended for a representation of the same species, the different examples of which exhibit considerable variations in the roughness of the tarsus. None of the specimens we have described in the text have a bill equal in length, from the front, to that of *L. Buffonii*, as characterized by the Prince of Musignano, by two lines; but the rest of the characters correspond with his description of that bird.—R.

having a slightly shorter and somewhat stouter bill, more curved at the point, the curve commencing under the middle of the nostrils. The posterior scales of the tarsus have a degree of roughness intermediate between the one from Melville Peninsula and that from Baffin's Bay: the form of the middle tail feathers as in the former.—The differences here detailed are slight; but we have thought it proper to notice them, as we have not seen authenticated specimens of *L. Buffonii* or *parasitica* of Boié, nor any which have the precise characters ascribed to these species by the Prince of Musignano *.

Dimensions.

	Male from Melv. Pen. Inch. Lin.	Spec. from Baffin's Bay. Inch. Lin.	English Specim. Inch. Lin.
Length, total	20 6	18 6	20 0
,, excluding central tail feathers	15 0	14 6	14 0
,, of central pair	12 3	9 0	11 0
,, of wing	12 0	12 3	11 6
,, of bill above	1 1	1 2	1 0
,, of bill to rictus	1 8½	1 10	1 7½
,, of tarsus	1 6½	1 6	1 7
Length of middle toe	1 3	1 3	1 3
,, of middle nail	0 3¼	0 4	0 4
,, of inner toe	0 10½	——	——
,, of hind toe	0 2	0 2	0 2
,, of hind nail	0 2	0 2	0 2
Transverse diameter of the bill at the front	0 4½	0 4	0 4

—R.

* The following is the description of a Jager, that frequents Hecla Bay, Spitzbergen, of which there are two specimens in the British Museum, brought home by Sir Edward Parry: it is, probably, the *L. parasitica* of the Prince of Musignano.

Stercorarius cepphus. (Leach, *Cat. Mus.*) *Hecla Bay, Spitzb.*, 1827.

Colour.—Head above and before the eye, and whole *dorsal plumage*, wings, and tail, nearly uniform blackish-grey; the quills and end of the tail nearly black, their shafts white. Neck above and below, and the throat, straw-yellow. Breast, a patch under the wings, and under tail coverts, dark greenish-grey. Belly and sides white. *Bill* horn-colour above; its tip, the legs, and feet, black.——Form.—*Bill* straight, broad at the base; its commissure curved only at the tip, and more slightly than that of *L. parasitica* (Nob.); its transverse diameter at the front is seven lines. The middle tail feathers are an inch and a quarter wide at the base, carrying most of their breadth until they pass the rest of the tail feathers, whence they taper suddenly, but evenly, to an acute point, that projects three inches beyond the adjoining feathers. *Tarsus* stout, smooth posteriorly: the scales somewhat elevated, though not pointed, and larger and farther apart than in our *L. parasitica*.

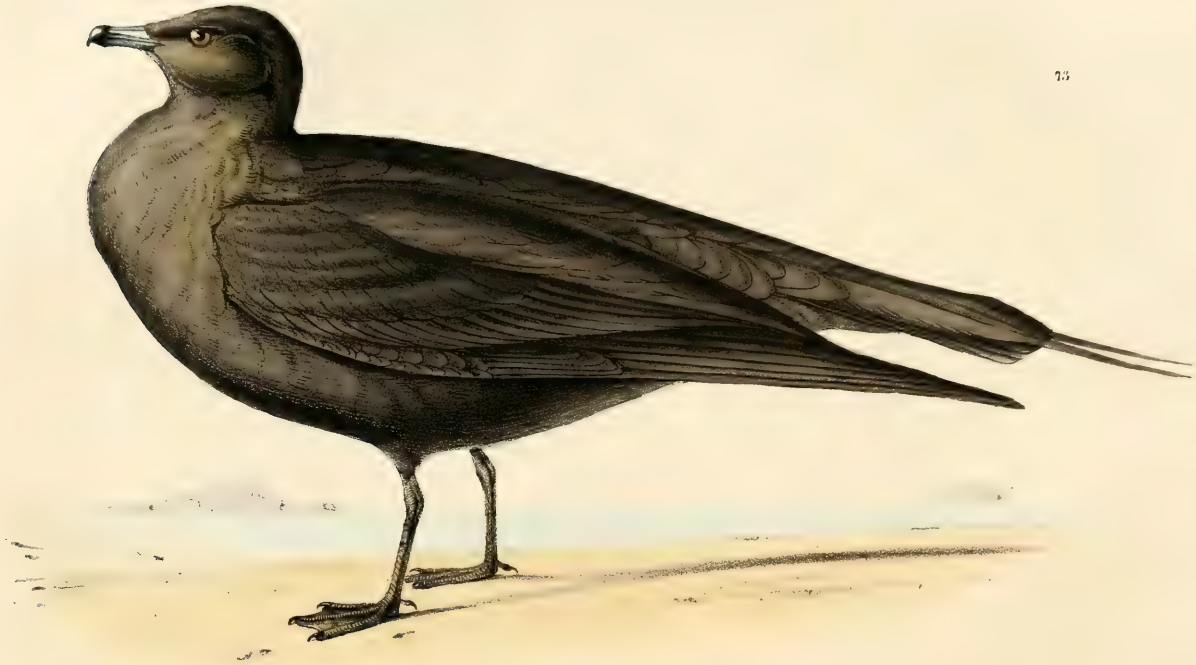
Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	19	0	Length of wing	13	0	Length of middle toe	1	3
,, excluding central tail feathers	16	0	,, of bill above	1	2	,, of middle nail	0	4
,, of central tail feath.	9	0	,, of bill to rictus	2	0	,, of hind toe	0	2
			,, of tarsus	1	8	,, of hind nail	0	2

The most striking difference betwixt this species and that of our *L. parasitica* is in the much greater breadth of the bill at the base, its larger gape, and the smoother and stouter tarsus. *L. parasitica* of the Prince of Musignano corresponds, according to his description, with the *Stercorarius cepphus* of Leach in the broad bill, which is, however, four lines longer; while the tarsus is a quarter of an inch shorter. We subjoin the characters he assigns to it:—

"Lestris parasitica (Boié).—Bill 1½ inch long, straight, broad at the base, entire; middle tail feathers very long, still wide 1½ inch from the tip, abruptly narrowing, slender and acute at the point; tarsus 1⅜ inch long, protuberances obsolete.—*Adult* blackish-brown; neck and beneath white, the former tinged with yellow.—*Young* wholly brownish."

"*Arctic Gull*, Lath. *Die Polmène*, Lepech., *Reise Th.*, iii., S. 224, t. xi. Bonap. *Syn.*, No. ."—R.



LESTRIS RICHARDSONII.

London Printed for John Murray, Bookseller to the Admiralty, January 1st 1836

[196.] 3. Lestris Richardsonii. (Swains.) *Richardson's Jager.*

Genus, Lestris, Illig.

Ch. Sp. Lestris Richardsonii, *sub-concolor, rectricibus mediis abruptè acuminatis, tarsis nigris posticè asperis viginti-duas lineas longis.*

Sp. Ch. Richardson's Jager, whole plumage brown, two middle tail feathers abruptly acuminated, tarsi black, twenty-two lines long.

Plate lxxiii.

This specimen appears to us to be in full and mature plumage; we cannot, therefore, view it as the young or even as the female of the *Lestris Buffonii* of Boié, which we only know from the characters assigned to it by the Prince of Musignano*. According to this account, the *L. Buffonii* has the bill an inch and a quarter long from the front; ours is only an inch: the tarsi are described as almost smooth; whereas in ours they are particularly rough. The adult, as figured in plate 762 of the *Pl. Enl.*, has the chin, throat, and sides of the neck quite white; but in our bird these parts are of the same pure and decided tint as that of the body, except that the ear feathers, and a few lower down the neck, have a slight tinge of ochre. The tarsi also, in both the plates cited by the Prince, are coloured *yellow*. These differences, with the more important one exhibited in the feet, will not permit us to join these birds under one name. Another distinction, which must not be overlooked, is in the colour of the feet. Edwards expressly says of his "Arctic Bird," (pl. 149) (which much more resembles ours than that figured on the plate immediately preceding,) that "the legs and toes are all *yellow*;" whereas in our bird these members are of a deep and shining black; while the hinder parts of the tarsi, toes, and connecting membrane, are particularly rough.—Sw.

This Jager breeds in considerable numbers in the Barren Grounds at a distance from the coast. It feeds on shelly mollusca, which are plentiful in the small lakes of the fur-countries; and it harasses the Gulls in the same way with others of the genus.

DESCRIPTION

Of a specimen killed at Fort Franklin, lat. 65¼° N.

Colour.—*Upper plumage* deep blackish-brown, back of the neck paler; quills and tail pitch-black; the shafts of the primaries and of the central tail feathers white to near the tips.

* "Lestris Buffonii (Boié). Bill one inch and a quarter from the front, straight, notched; middle tail feathers gradually tapering, narrow for several inches, ending in a point; tarsus one inch and a half long, almost smooth. —*Adult* brown; neck and beneath white, the former tinged with yellow.—*Young* wholly brownish."

"*Arctic Bird*, Edw., pl. 148; Buff. *Pl. Enl.* 762. *Lestris crepidata*, Brehm."—Bonap. *Syn.*, No. 306.

Under plumage hair-brown, mixed on the ears and sides of the neck with yellowish-brown; under tail coverts darker; axillaries and inner wing coverts pitch-black. Interior of the quills greyish-brown, paler than any other part of the plumage. *Bill* greenish-black. *Legs* and *feet* shining velvet-black.

Form, typical.—*Bill*, towards the base, nearly cylindrical, being very slightly higher than broad; culmen rounded; upper mandible, towards the end, rather hooked, and destitute of a distinct notch; the cutting margins at that part being slightly inflexed, so as to produce the appearance of an obsolete notch, although the margins are actually entire. (This formation is frequently seen in the Pigeon family.—Sw.) *Wings* an inch longer than the lateral tail feathers; primaries acute, secondaries truncated. *Tail* of twelve feathers; the central pair, three inches longer than the adjoining ones, much acuminated; the others are more or less truncated and emarginate, the tip of the shaft projecting into a short acuminated *mucro* or point; the tail is graduated, the exterior feathers being eight lines shorter than the pair next the middle. *Thighs* bare for eight lines. *Tarsi* protected anteriorly by strong falciform or crescentic *scutelli;* reticulated behind, as well as the knee and tarsal joints; the soles of the feet and sides of the toes and membranes are covered with small thick scales, which have each a raised central ridge, or a sharp point.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	22	8	Length of bill above .	1	1	Length of middle nail .	0	4½
,, excluding central tail feathers . .	19	6	,, of bill to rictus .	1	10	,, of inner toe . .	0	11½
,, of central pair .	9	0	,, of tarsus . .	1	10	,, of hind toe .	0	2½
,, of wing .	13	6	,, of middle toe .	1	5	,, of hind nail . .	0	1½

—R.

ANATIDÆ.

The birds of this family are of great importance in the fur-countries, as they furnish at certain seasons in the year, in many extensive districts, almost the only article of food that can be procured. The arrival of the water-fowl marks the commencement of spring, and diffuses as much joy among the wandering hunters of the Arctic regions as the harvest or vintage excites in more genial climes. The period of their migration southwards again, in large flocks at the close of summer, is another season of plenty, bountifully granted to the natives and fitting them for encountering the rigour and privations of a northern winter. The Anatidæ have, therefore, very naturally, been observed more attentively than any other family of birds, both by the Indians and white residents of the fur-countries; and as they form the bulk of the specimens that have been transmitted to England, they are also better known to ornithologists. The various genera presenting only shades of difference in their habits, and crowding almost promiscuously to the same places of resort, we have, with the view of saving space, thrown the little we have to say on these subjects into a tabular form, instead of repeating nearly the same account under each species.—R.

The numerous forms comprised in this family, and the variety of species distributed in the seas of Europe, have more especially drawn the attention of British Ornithologists to the natural arrangement of the Anatidæ. Accordingly two well known writers of our own days, Drs. Leach and Fleming, have named and characterised nearly all the northern groups, and two circular dispositions of the family have been given by Mr. Vigors. In the first (Linn. Tr., xiv. 499), the Mergansers are made to go between the *Anatinæ*, Sw. and the *Fuligulinæ*, Sw., and these latter are stated to lead immediately to the Geese. In the second (Zool. Journ., ii. 404), the Swans are separated as a distinct sub-family, and the Mergansers are thrown into the same division with the *Fuligulinæ*, Sw. We scarcely know which of these circular arrangements is most objectionable, as least borne out by analysis, or by the general opinion of all other ornithologists. They are plainly the result of theory, and of a theory misapplied. The correctness of this our opinion has been anatomically demonstrated by Mr. Yarrell, in his highly valuable paper on the Tracheæ of Birds (Linn. Trans., xv. p. 378), to which we must refer the reader. The circumstances now alluded to are, however, too important to be thus dismissed, since they afford one of the most singular proofs in support of the circular succession of affinities, as developed by Mr. Mac Leay, at the same time shewing how easily the theory may be applied to any

given group, whether large or small, provided we neglect analysis. It is a most extraordinary thing that one naturalist, rejecting all theory, and confining himself to facts, should actually have marked out, so far as the British species are concerned, their circular succession, *totally unconscious of having done so*, while another, following theory and overlooking facts, should have produced two complete quinarian circles, both of which, if there be any truth in Mr. Yarrell's inferences (from internal structure), or our own researches (directed only to external form and habits), are entirely artificial.—Sw.

ANATINÆ. Swains.

Gen. *Anas, Dendronessa, Mareca.*

The *Anatinæ* feed on soft substances, such as fresh-water insects and tender aquatic plants, which they procure near the surface, or, aided by the length of their necks, at the bottom, in shallow muddy places; and worms and slugs, which they search for among the grass. By day they resort to small lakes and rivers, and in the night retire to the fields. They are strong and swift on the wing, and are watchful birds, that seldom dive to escape pursuit, unless when moulting; but when disturbed fly away, making at the outset a circle in the air to survey the cause of their alarm.

Distribution.—*Anas clypeata* and *A.* (*Dafila*) *acuta* frequent chiefly the clear lakes of the northern districts, and breed in the Barren Grounds, being found in numbers in the more southern woody districts in spring and autumn only.—*A.* (*Boschas*) *domestica*, *A.* (*Chauliodus*) *strepera*, and *Mareca Americana*, breed in the woody districts up to their most northern limits, in latitude 68°.—*A.* (*Boschas*) *crecca* is abundant to the extremity of the continent, both in the woody and barren districts.—*A.* (*Boschas*) *discors*, though very plentiful on the Saskatchewan, was not observed farther north than the fifty-eighth parallel; while *Dendronessa sponsa* seldom goes to the northward of the fifty-fourth degree of latitude, and is rare even to the southward of that parallel.

* Through the kindness of the Rev. Mr. Booth, of Friskney, in Lincolnshire, I procured the following interesting information respecting some of the Anatidæ from an intelligent keeper of a decoy in his neighbourhood:—

"Skelton is unacquainted with the habits of the Gadwall; but he tells me that the Widgeon and Pintail do not willingly dive. Of course, if driven to it, they can, but they do not dive for their food, and though in play they sometimes splash under water, they never remain beneath the surface like the Pochard.—With respect to *food:* the Mallard, Pintail, and Teal frequent rich flooded lands, '*swittering with their nebs in the soil, and sucking out its strength;*' but the Widgeon feeds quite differently, being '*an amazing fowl to graze, a strange eater of grass.*' It is especially fond of 'fluttergrass' *Glyceria aquatica vel fluitans?*), which it crops on the surface, but it likewise eats many other herbs. When the decoy has been so full of Widgeons that they have devoured every blade on the landings, Skelton has taken advantage of their absence in the night, when they resort to the green salt marshes on the sea-coast, and laid down sods pared from the fields, on which they readily graze. In common, however, with the Mallard, Teal, and Pintail, they are fond of willow-weed seeds (*Epilobium?*), with which he feeds all the fowl in the decoy, as they prefer it to oats and every other kind of grain."—R.

FULIGULINÆ. Swains.

Gen. *Somateria*, *Oidemia*, *Fuligula*, *Clangula*, *Harelda*.

The birds of this *sub-family* frequent the sea and deep parts of fresh-water lakes and rivers. They walk with difficulty, but dive well, and take their prey, which consists chiefly of insects, mollusca, and small fry, from some depth. Most of them endeavour to escape from danger by swimming away or diving, instead of taking wing.

Distribution.—*Somateria spectabilis* and *mollissima* are peculiarly Sea-ducks, and are never, I believe, seen in fresh-water. Their food consists mostly of the soft mollusca so abundant in the Arctic Sea. They are only partially migratory, the older birds seldom moving farther southwards in winter than to permanent open water. Some *Eider Ducks* winter on the coast of New Jersey; but the *King Ducks* have not been seen to the southward of the fifty-ninth parallel.

Oidemia perspicillata, *fusca*, and *nigra* seek their food principally in the sea, and their flesh is high-flavoured and oily. The two former breed on the Arctic coasts, migrate southwards in company with *Clangula glacialis*, halting both on the shores of Hudson's Bay and on the lakes of the interior as long as they remain open, and feeding then on tender shelly mollusca.—The *O. nigra* frequents the shores of Hudson's Bay, breeding between the fiftieth and sixtieth parallels. It was not seen by us in the interior.

Fuligula valisneria, *ferina*, *marila*, and *rufitorques*, breed in all parts of the fur-countries, from the fiftieth parallel to their most northern limits, and associate much on the water with the *Anatinæ*.—*F. rubida* frequents the small lakes of the interior up to the fifty-eighth parallel. It is very unwilling to take wing, and dives remarkably well. In swimming, it carries its tail erect, and, from the shortness of its neck, nearly as high as its head, which at a little distance causes it to appear as if it had two heads.

Clangula vulgaris and *albeola* frequent the rivers and fresh-water lakes throughout the fur-countries in great numbers. They are by no means shy, allowing the sportsman to approach sufficiently near; but dive so dexterously at the flash of the gun or the twanging of a bow, and are consequently so difficult to kill, that the natives say they are endowed with some supernatural power. Hence their appellation of "Conjuring" or "Spirit Ducks."—*C. Barrovii* has hitherto been found only in the valleys of the Rocky Mountains. Its manners do not differ from those of the common *Golden-eye*.—*C. histrionica* haunts eddies under cascades, and rapid streams. It takes wing at once when disturbed, and is very vigilant. We never saw it associating with any other Duck, and it is a rare bird.

Harelda glacialis is abundant on the Arctic Sea. It associates with the

Oidemiæ, remaining in the north as long as it can find open water, and assembling in very large flocks previous to migrating. It halts, during its progress southwards, both on the shores of Hudson's Bay and in the inland lakes, and is one of the last of the birds of passage which quits the fur-countries. In the latter end of August, when a thin crust of ice forms during the night on the Arctic Sea, the female may be often seen breaking a way with her wings for her young brood. This bird, the "Caccawee" of the Canadians, is the most noisy of all the Ducks.

MERGANINÆ. Swains.

Genus, *Mergus*.

The *Mergansers* feed on fish and fresh-water crustaceæ. They pass most of their time in the water, swim quickly with the body immersed, withdraw their head under the surface immediately on the appearance of danger, and dive for a long time. They also fly long and quickly, but walk badly.

Distribution.—*Mergus merganser*, *serrator*, and *cucullatus* frequent the lakes and rivers in all parts of the fur-countries. They make their nests of withered grass and feathers, in unfrequented places; and are amongst the latest of the *Anatidæ* that migrate southwards.—*Note*. The *Mergus albellus* did not come under our notice.

ANSERINÆ. Swains.

Gen. *Cygnus*, *Anser*.

The *Swans* frequent fresh-waters, on which they swim with great swiftness and much elegance, aiding themselves by raising their wings when going before the wind. If attacked when swimming, they strike severely with their wings. They walk badly; but fly high, and seldom alight except in the water. They feed on the roots of aquatic plants, frogs, and small fry. Their nest is generally placed on a small island, and is constructed of any loose materials that happen to be in the immediate vicinity, heaped together until they form a large mound. They are shy birds, and so difficult of approach, that the Indians generally kill them at a long shot with ball.

Distribution.—*Cygnus buccinator* arrives in the spring some days before the Geese, and remains later in the season. It breeds in the interior, between the sixtieth and sixty-eighth parallels.—*Cygnus Bewickii* arrives after the Geese, and breeds on the small lakes of the coasts and islands of the Arctic Sea. Some flocks of it cross the interior in their migrations; but greater numbers follow the coast line of Hudson's Bay.

The *Geese* feed on vegetable substances, pasturing during the day, and retiring in the night to repose on the water. They swim well, but dive only when moulting and unable to fly; if pursued at such times, they leave the water and

try to hide themselves on shore. They fly high and swiftly, in flocks, arranged in two lines meeting in an acute angle: they alight on the ground, seldom on the water.

Distribution.—*Anser albifrons* and *hyperboreus* feed chiefly on berries, and are seldom seen on the water, except in the night or when moulting. They frequent the sandy shores of rivers and lakes in flocks, one of their number generally performing the duty of a sentinel. Both species breed in great numbers in Arctic America and on the islands of the Polar Sea.—*A. albifrons* is rare on the coast of Hudson's Bay. It migrates over the interior, and chooses its breeding-places in the vicinity of woody tracts.—*A. hyperboreus* visits both the interior and the coast in its migrations; but resorts to the Barren Grounds to breed.—*A. Canadensis* is abundant in pairs throughout the fur-countries up to a high latitude. It associates in flocks only on its first arrival. It feeds on grass and on all kinds of berries. Early in the spring I have found its crop filled with the farinaceous, astringent fruit of the *Eleagnus argentea*.—*A. bernicla* and *Hutchinsii* breed in considerable numbers on the shores and islands of the Arctic Sea; but keep near the sea-coast in their migrations, and are seldom seen in the interior. They feed on marine plants and on the *mollusca* which adhere to them, as well as on grass and berries*.—R.

[197.] 1. Anas clypeata. (Linn.) *The Shoveller.*

Sub-fam. Anatinæ, Sw. Genus, Anas, Linn., Swainson†. *Sub-genus*, Typical form.
Anas clypeata. Linn. *Ed.* 1767, i., p. 200.
Shoveller-duck. Penn. *Arct. Zool.*, ii., p. 557, No. 485. Wils., viii., p. 65, pl. 67, f. 7.
Canard suchet (*Anas clypeata*). Temm., ii., p. 842.
Anas (Rhynchaspis) clypeata. Bonap., *Syn.*, No. 322.
Mimenick. Cree Indians.

DESCRIPTION

Of a *male*, killed at Fort Franklin, May, 1826.

Colour.—Head, adjoining half of the neck, medial stripe to the interscapulars, the whole

* The Prince of Musignano enumerates *A. segetum* and *leucopsis* in his list of American Geese; but they did not come under our notice in the fur-countries. Hutchins and Hearne speak of the Canada Goose under the name of "Common Grey Goose;" what they term "Canada Goose" being our *A. Hutchinsii*.—R.

† Want of space compels us to omit a very long dissertation on the natural groups of this family, which would explain our reasons for rejecting the name of *Rhynchaspis*, and for considering the Gadwall as a sub-genus. We trust that the establishment of a liberal and enlightened Ministry, now happily effected, will remove the odium which has long been cast on our government for its apathy to all scientific pursuits; that it will now continue to patronise, like every other nation in Europe, works of this nature; and that we may have the opportunity of publishing, not only our researches upon this family, but those upon very many others, here but slightly noticed.—Sw.

back, interior scapulars, and primaries, umber-brown; sides of the head, the neck, and crest, glossed with duck-green: rump and tail coverts, above and below *, with blackish-green. Lower half of the neck, the breast, shoulders, shorter scapulars, ends of the greater coverts, and sides of the rump, white; longer scapulars, striped with berlin-blue, white and blackish-brown. Lesser coverts berlin-blue. *Speculum* brilliant grass-green, broadly bordered above and narrowly edged below with white; bounded interiorly with greenish-black. Belly and flanks deep orange-brown, the latter undulated posteriorly with black. *Bill* black. *Legs* orange.

Form.—*Bill* a little higher than wide at the base, much depressed, dilated and rounded at the end. Mandibles furnished with long slender crowded laminæ, the upper ones acute and projecting, forming an apparatus admirably fitted for sifting small insects from the water. Surface of the upper mandible pitted near its oblong *unguis*. *Wings* scarcely an inch shorter than the tail, which is graduated, moderately acute, and consists of fourteen acute feathers. *Tarsus* scarcely compressed. Hind toe not lobed, and the outer toe shorter than the middle one, as in the rest of the *Anatinæ*.

The *female* is liver-brown above, with broad borders of pale wood-brown; underneath pale wood-brown with obscure liver-brown marks. She wants the dark-brown and green colours of the head, rump, and tail coverts, the white of the neck, breast, sides of the rump, and scapulars, and also the orange-brown of the belly. The lesser coverts are slightly glossed with berlin-blue, and the speculum is less vivid than in the male.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	21	6	Length of bill above .	2	4½	Length of middle toe .	1	9
,, of tail . .	4	0	,, of bill to rictus .	2	10	,, of its nail . .	0	4½
,, of folded wing .	9	6	,, of tarsus . .	1	5			

—R.

[198.] 2. Anas (Chauliodus) strepera. (Swains.) *The Gadwall.*

Genus, Anas, Linn. Swains. *Sub-genus* Chauliodus†, Swainson.
The Gadwall (*Anas strepera*). Wils., viii., p. 120, pl. 61, f. 1.
Canard chipeau ou Ridenne (*Anas strepera*). Temm., ii., p. 837.
Anas strepera. Bonap. *Syn.*, No. 324.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May 22, 1827.

Colour.—Top of the head and nape liver-brown edged with grey; head beneath and neck grey with small brown specks. Base of the neck above and below, anterior part of the back, exterior scapulars, flanks, and sides of the vent, clove-brown, marked with concentric horse-shoe shaped white lines. Interior scapulars, lesser coverts, primaries, tertiaries, and tail, hair-brown; intermediate coverts, chestnut-brown; greater coverts, rump, and upper and under

* The *vent* and part or whole of the *under tail coverts* in all the American species of the genera *Anas* and *Mareca* are black.—R.

† Th. Χαυλιόδους, *exsertos dentes habens.*

tail coverts, bluish-black; *speculum* white, its anterior border black. Lower part of the breast, middle of the belly, and under surface of the wings white. *Bill* brownish-black, pale beneath. *Legs* orange coloured.

Form.—*Bill* as long as the head, of equal breadth and height at the rictus; depressed but not widening anteriorly. Laminæ of the mandibles rather stronger and much shorter than those of the Shoveller, but finer and more numerous than those of any other northern species. The upper ones project a full tenth of an inch beyond the margin. *Wings* nearly equal to the tail; first and second quills equal and largest. *Tail* consisting of sixteen feathers, the lateral ones graduated.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	23	0	Length of bill above .	1	7	Length of middle toe .	1	11
,, of tail . .	3	6	,, of bill to rictus .	2	0	,, of its nail . .	0	4
,, of wing .	10	6	,, of tarsus . .	1	6			

—R.

[199.] 3. Anas (Dafila) caudacuta. (Leach.) *Pintail Duck.*

Genus, Anas, Linn. *Sub-genus*, Dafila, Leach, MSS.
Pintail duck. Penn., *Arct. Zool.*, ii., p. 566, No. 500. Wils., viii., p. 72, pl. 68, f. 3.
Canard à longue queue ou pilet (*Anas acuta*). Temm., ii. p. 838.
Anas acuta. Bonap., *Cat.*, p. 31, No. 315.
Keeneego yaway-sheep. Chippeways.

DESCRIPTION
Of a *male*, killed on the Saskatchewan, May, 1827.

Colour.—Head and adjoining part of the neck anteriorly umber-brown, with paler edges; neck above blackish-brown; the whole of the back, shorter scapulars, sides of the breast, and flanks marked with fine waved transverse lines of brownish white and black, most regular and broadest on the long feathers lying over the thighs; long scapulars and tertiaries black, the borders of the former and outer webs of the latter white; wing coverts and primaries hair-brown; the primary shafts white, and the interior coverts mottled with the same; *speculum* dark green, with purple reflexions, bounded above by a ferruginous bar and interiorly and below by white. *Tail*, and most of its upper coverts, dark brown with pale borders. Two long central upper coverts, vent, and under coverts, black; the latter bordered with white. A lateral streak on the upper part of the neck, the sides and front of its lower part, the breast, and belly white. The posterior part of the abdomen minutely marked with grey. *Bill* black; sides of the upper mandible bluish-grey. *Feet* blackish-grey.

Form.—*Bill* much lengthened, fully as long as the head, considerably higher than wide at the base; the upper mandible of equal breadth to the point; the *laminæ* not projecting beyond the margin. *Wings* two inches shorter than the tail. Scapulars, tertiaries, tail

feathers, and their coverts tapering and acute; the middle pair of tail coverts having long slender points that project two inches and a half beyond the tail. *Tail* graduated. *Tracheal dilatation* a small osseous sac, the size of a hazel nut.

The *female* is smaller than the male. Upper plumage brownish black, with a spot on each side of the shaft, and borders of reddish-white. The middle coverts are not prolonged beyond the tail, the barred feathers of the flanks are wanting, and the mirror is destitute of the green gloss. Its total length is 21 inches; extent of its wings 29 inches.

DIMENSIONS
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total* . .	26	6	Length of wing .	10	9	Length of tarsus .	1	7
,, of tail . .	5	0	,, of bill above .	2	0	,, of middle toe .	2	0
,, of long coverts .	7	6	,, of bill to rictus .	2	3	,, of middle nail .	0	4½

—R.

[200.] 4. ANAS (BOSCHAS) DOMESTICA. (Linn.) *The Mallard.*

GENUS, Anas, LINN. SWAINS. *Sub-genus*, Boschas. ANTIQ. SWAINS.
Boschas major. RAY, *Syn.*, A. 1, 150, 1.
Anas boschas. FORSTER, *Phil. Trans.*, lxii., p. 419, No. 53.
The Mallard. PENN. *Arct. Zool.*, ii., p. 563, No. 494. WILS., viii., p. 112, pl. 60, f. 7.
Canard sauvage (*Anas boschas*). TEMM., ii., p. 835.
Anas boschas. BONAP., *Syn.*, No. 323.
Ethin-neesew sheesheep. CREE INDIANS. Stock-duck. HUDSON'S BAY RESIDENTS.

DESCRIPTION
Of a *male*, killed on the Saskatchewan, May 7, 1827.

COLOUR.—Head and adjoining half of the neck deep emerald-green: below which a white collar; rest of the neck and breast dark chestnut. Anterior part of the back, wing coverts, primaries, and tail, hair-brown of different tints, the tail feathers bordered with white, and the anterior part of the back finely waved with grey; rump and upper tail coverts blackish-green: under tail coverts greenish-black. Shoulders, scapulars, sides of the rump, flanks, and abdomen, grey, finely undulated with clove-brown: some of the exterior scapulars chestnut, with darker lines. *Speculum* imperial purple, reflecting green, bounded above and below with velvet-black and white, and interiorly with reddish-brown. Sides of the rump partly, and interior of the wings entirely, white. *Bill* wax yellow. *Irides* reddish-brown. *Legs* orange.

FORM.—*Bill* rather longer than the head; its breadth and height at the rictus equal; depressed, but scarcely dilated, towards the point. *Laminæ* strong, the upper ones not projecting below the margin of the mandible†. Plumage of the nape and back of the neck somewhat lengthened. *Wings* an inch and a half shorter than the *tail*, which consists of sixteen feathers; the two central pairs of *upper tail coverts* curl upwards.

* To end of long tail coverts; some specimens measure two inches more.—R.

† A Mallard, in full plumage, killed in Lincolnshire in the winter, has the *upper laminæ* projecting fully a line below the margin of the mandible.—R.

The *female* resembles the male only in the wings. The upper plumage and tail are mostly liver-brown with pale brown margins and horse-shoe shaped bars; the upper parts of the head darker; sides of the head and neck more finely marked. Under plumage yellowish-grey obscurely spotted with brown; the breast tinged with chestnut.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	24	6	Length of bill above .	2	2	Length of middle toe .	2	0
,, of tail . .	3	3	,, of bill to rictus .	2	7	,, of middle nail .	0	4½
,, of wing . .	11	3	,, of tarsus . . .	1	9			

—R.

[201.] 5. Anas (Boschas) crecca, var. (Forst.) *American Teal.*

Genus, Anas. *Sub-genus*, Boschas, Antiq. Swains.
Anas crecca, varietas. Forst. *Phil. Trans.*, lxii., p. 419, No. 51.
American Teal. Penn. *Arct. Zool.*, ii., p. 569, No. 504.
Green-winged Teal (*Anas crecca*). Wils., viii., p. 101, pl. 60, f. 4.
Anas crecca. Bonap. *Syn.*, No. 330.
Apeesteh-sheep. Cree Indians.

This beautiful though very common Teal was considered to be a distinct species from the European *A. crecca* by Pennant; but the two are so similar in their general plumage, and in the forms and dimensions of all their parts, that we agree with Forster in describing the American bird as merely a variety. The only permanent difference that we have been able to detect, after comparing a number of specimens, is, that the English Teal has a white longitudinal band on the scapulars, which the other wants. All the specimens brought home by the Expedition have a broad transverse white bar on the shoulder, which does not exist in the English one; but there is a specimen in the Hudson's Bay Museum, from the fur-countries, which has neither that bar nor the scapular stripe. This Duck feeds much on fresh-water insects, and when fat is very delicate food.—R.

DESCRIPTION
Of a *male*, killed, May 25, 1826, at Fort Franklin.

Colour.—Head and adjoining half of the neck chestnut-brown; chin, region of the bill, and forehead, brownish-black; behind the eye a broad duck-green band, narrowly edged with white; nuchal crest tipped with deep indigo-blue. A collar, base of the neck above, inter-scapulars, part of the scapulars, the flanks, and vent, finely undulated with brownish-black and white. Outer border of the scapulars black; the interior and longer scapulars, wing coverts, primaries, posterior part of the back and tail, hair-brown; tail coverts velvet-black

and green, with whitish edges. *Speculum* half velvet-black, half vivid grass-green, bordered above and below with brownish-white, and posteriorly on the tertiaries and scapulars with black. Breast wood-brown, with round black spots; a crescentic band on the shoulder; belly and lateral under tail coverts white, middle ones black. *Bill* bluish-black. *Irides* yellow. *Feet* bluish-grey, mixed with red.

Form.—*Bill* scarcely as long as the head, narrower, but otherwise nearly of the same form with that of *A. Boschas;* the *laminæ* of the lower mandible differ, however, in being very fine, little raised, and twice as numerous as the upper ones. Plumage of the nape and back of the neck still more lengthened than in the Mallard. *Wings* about an inch shorter than the tail, which consists of sixteen feathers. Tracheal dilatation an osseous capsule, capable of holding a pea.

The *female* wants the crest, the chestnut and green colours of the head, the velvet-black stripes on the scapulars, the black under tail coverts, the round spots on the breast, and all the fine undulated markings on the base of the neck, flanks, &c. The wings are nearly as in the male; the speculum, however, is less vivid, with the black more inclined to brown. The upper plumage, breast, and flanks, liver-brown, with pale margins. Head and neck the same, in smaller specks. Chin and belly white, the latter obscurely marked with brown.

Dimensions

Of the *male.*

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	15	0	Length of bill above .	1	5	Length of middle toe .	1	4
,, of tail . .	2	6	,, of bill to rictus .	1	8	,, of its nail . .	0	3
,, of folded wing .	7	0	,, of tarsus . .	1	2	Envergure . . .	24	0

—R.

[202.] 6. Anas (Boschas) discors. (Swains.) *Blue-winged Teal.*

Genus, Anas. *Sub-genus*, Boschas, Antiq. Swains.
White-faced Teal. Penn. *Arct. Zool.*, ii., p. 568, No. 503.
Blue-winged Teal (*Anas discors*). Wils., viii., p. 74, pl. 68, f. 4.
Anas discors. Sab. *Frankl. Journ.*, p. 701. Bonap. *Syn.*, No. 329.
Cheesteh-qua-nan-weeshep (*Shoe-string Duck.*) Cree Indians.

DESCRIPTION

Of a *male,* killed on the Saskatchewan, June, 1827.

Colour.—Upper surface of the head and under tail coverts brownish-black; a broad white crescent from the forehead to the chin, bordered all round with black; sides of the head and adjoining half of the neck bright lavender-purple; base of the neck above, back, tertiaries, and tail coverts, brownish and blackish-green, the fore parts, including the shorter scapulars, margined and marked with semi-ovate pale brown bars; longer scapulars longitudinally striped with blackish-green, berlin-blue, and pale brown. Lesser wing coverts pure berlin-blue; greater coverts white, their bases brown; *speculum* dark green; primaries, their

coverts, and the tail, liver-brown. Sides of the rump, longer under wing coverts, and axillary feathers, pure white. The *under plumage* pale reddish-orange, glossed with chestnut on the breast, and thickly marked throughout with round blackish spots, which on the breast and tips of the long flank feathers change to bars. *Bill* bluish-black. *Feet* yellow.

Form.—*Bill* larger and wider than that of *A. crecca; laminæ* like those of the Mallard; but the upper ones stronger and distinctly projecting beyond the margin: (*a character which belongs to no other species here enumerated, except the Gadwall and the Shoveller.*—Sw.) *Wings* an inch and a half shorter than the tail, which consists of fourteen feathers. The nuchal plumage not lengthened as in the two preceding species.

The *female* wants the white patches on the sides of the rump, the crescent before the eye, and the rich purple tint on the head and neck. Its upper plumage is browner, and the pale bars are less distinct and handsome. The under plumage is white and brown, with irregular blotches of a darker colour, instead of neat round spots. The *wings* as in the male.—The *young* birds want the green speculum, and in other respects are like the female.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	18	0	Length of bill above .	1	7½	Length of middle toe.	1	5
,, of tail . .	2	6	,, of bill from rictus	2	0	,, of middle nail	0	4
,, of folded wing	7	3	,, of tarsus . .	1	2			

—R.

[203.] 1. Mareca Americana. (Stephens.) *American Widgeon.*

Sub-family, Anatinæ, Swains. *Genus*, Mareca, Steph.
American Widgeon. Penn. *Arct. Zool.*, ii., p. 567, No. 502. Wils., viii., p. 86, pl. 69, f. 4.
Anas Americana. Sab. *Frank. Journ.*, p. 700. Bonap. *Syn.*, No. 326.
Mareca Americana. Steph. *Gen. Zool.*, xii., p. 135.
Atheekemow-weeshep. Cree Indians.

DESCRIPTION
Of a *male*, killed on the Saskatchewan, May, 1827.

Colour.—A white band from the forehead to the nape, bounded behind the eye by a broad dark green patch, which ends in the nuchal crest. Upper part and sides of the breast brownish-red, glossed with grey. Base of the neck above, interscapulars, scapulars, and flanks, minutely undulated with brownish-red and black; hind part of the back undulated in a similar manner with clove-brown and white, the latter colour prevailing on the tail coverts. Lesser wing coverts, primaries, and tail, clove-brown; intermediate and greater coverts, sides of the rump, breast, and belly, pure white. *Speculum* velvet-black below, duck-green above, bounded superiorly with black and posteriorly with white. Exterior webs of the tertiaries and lateral and inferior tail coverts greenish-black, the first bordered with white. *Bill* bluish-grey, bordered and tipped with black.

Form.—*Bill* particularly short, being not so long as the head, armed with *laminæ* resembling those of the Mallard. Plumage of the *nape* somewhat lengthened. *Wings* above an inch shorter than the acutely-pointed tail, which consists of fourteen feathers.

The *female* has the upper plumage dark liver-brown, edged and remotely barred with pale brown and white. The intermediate wing coverts are merely edged with white, and there is no green on the head. *Tail* shorter and not so tapering. Total length about two inches less than the male.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	23	0	Length of bill above .	1	5	Length of middle toe .	1	10
,, of tail . .	5	6	,, of bill to rictus .	1	9	,, of middle nail .	0	4½
,, of folded wing	10	3	,, of tarsus . .	1	6			

—R.

[204.] 1. Dendronessa sponsa. (Nobis.) *Summer Duck.*

Sub-family, Anatinæ, Swains. *Genus*, Dendronessa, Richards. Swains.
Summer Duck. Edw., pl. 101. Penn. *Arct. Zool.*, ii., p. 562, No. 493. Wils., viii., p. 97, pl. 60, f. 3.
Anas sponsa. Sab. *Frankl. Journ.*, p. 702. Bonap. *Syn.*, No. 328.
Ansee-awmo. Chippeways.

DESCRIPTION

Of a *male*, killed at Cumberland House, lat. 54°, June, 1827.

Colour.—Head above and space between the eye and bill glossy dark-green; cheeks and a large patch on the sides of the throat purple, with blue reflexions; pendant occipital crest of green and auricula-purple, marked with two narrow white lines, one of them terminating behind the eye, the other extending over the eye to the bill; sides of the neck purplish-red, changing on the front of the neck and sides of the breast to brown, and there spotted with white. Scapulars, wings, and tail, exhibiting a play of duck-green, purple, blue, and velvet-black colours; interscapulars, posterior part of the back, rump, and upper tail coverts, blackish-green and purple; several of the lateral coverts reddish-orange; a hair-like, splendent, reddish-purple tuft on each side of the rump; the under coverts brown. Chin, throat, a collar round the neck, a crescentic bar on the ears, the middle of the breast, and whole of the abdomen, white. Flanks yellowish-grey, finely undulated with black; the tips of the long feathers, and also of those on the shoulder, broadly barred with white and black. Inner wing coverts white, barred with brown. Almost all the coloured plumage shows a play of colours with metallic lustre. *Bill* red; a space between the nostrils, its tip, margins, and lower mandible, black. *Legs* orange-coloured.

Form.—*Bill* shorter than the head; considerably narrowed towards the tip, like that of the Eider; its height at the rictus greater than its width; its frontal angles prolonged. *Mandibles* strongly toothed. *Unguis* strong, arched or hooked. Nostrils large, pervious,

lateral. Forehead sloping. *Occipital crest* long and pendant. *Wings* shorter than the tail, which consists of sixteen wide, rounded feathers.

The *female* wants the fine lines on the flanks and the hair-like tufts on the sides of the rump. She has a shorter crest; and the plumage is less vivid, particularly about the head, where it is mostly brown.

DIMENSIONS
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	21	0	Length of bill above .	1	4½	Length of tarsus . .	1	6
,, of tail . .	4	6	,, of bill to lateral angle	2	0	,, of middle toe & claw	2	0
,, of folded wing .	9	0	,, of bill to rictus .	1	10			

—R.

[205.] 1. SOMATERIA SPECTABILIS. (Leach.) *King Duck.*

SUB-FAMILY, Fuligulinæ, SWAINS. *Genus*, Somateria, LEACH.
Grey-headed Duck. EDW., pl. 154.
King Duck. PENN. *Arct. Zool.*, ii., p. 554, No. 481.
Anas spectabilis (*King Duck*). SAB. *Greenl. Birds*, p. 552, No. 26.
Canard à tête grise (*Anas spectabilis*). TEMM., ii., p. 851.
Anas spectabilis (*King Duck*). SAB. *Suppl. Parry's First Voy.*, p. cevii., No. 28. RICHARDS. *Append. Parry's Second Voy.*, p. 371, No. 32.
Fuligula (Somateria) spectabilis. BONAP. *Syn.*, No. 332.

DESCRIPTION

Of a *male*, killed, 2nd June, 1822, on Melville Peninsula.

COLOUR.—Frontlet, circumference of the frontal plates, under eyelid, edge of the upper one, and two converging bands on the throat, meeting on the chin, rich velvet-black. Top of the head and nape bluish-grey. Cheeks pistachio-green. Superciliary line, reaching to the nape, and the breast, ochre-yellow. Neck, fore part of the back, most of the lesser wing coverts, and the sides of the rump, white. Scapulars, greater coverts, lesser quills, curved tertiaries, rump, tail coverts, and *under plumage*, ink-black. Borders of the wings, greater quills and tail, blackish-brown. *Bill* vermilion-red, its *unguis* flesh-coloured; frontal plates* and base of the lower mandible dutch-orange. *Legs* ochre-yellow.

FORM, typical. Frontlet, rising immediately behind the nostrils, nearly perpendicularly to the bill, compressed and bounded laterally by two broad, flat, rounded fleshy plates. Unguis strong and vaulted. *Nostrils* pervious. *Wings* two inches shorter than the tail. *Hind toe* lobed; smaller than that of the *Eider*.

The *female* exactly resembles the female Eider, except that the frontal plates of the upper mandible, instead of being almost horizontal, are more nearly vertical. The bill is also shorter than that of the Eider.—The *young male* has the head and neck dusky yellowish-grey,

* These plates, Captain Lyon informs us, exactly resemble in colour the rind of a fine orange, but change to a dingy brown after death.—R.

crowded with blackish spots. The upper plumage mostly pitch-black, with yellowish-brown edgings. Breast and flanks yellowish-brown, spotted and barred with black. Belly the same colours intimately mixed. Bill as in the female.

DIMENSIONS

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	24	6	Length of bill to rictus	2	7	Length of hind toe .	0	7½
,, of tail . .	4	3	,, of tarsus . .	1	10½	,, of its nail . .	0	2¾
,, of wing .	11	6	,, of middle toe .	2	5	Height of frontal plates	1	6
,, of bill to front .	1	2	,, of middle nail	0	5	Breadth of ditto . .	1	0

—R.

[206.] 2. SOMATERIA MOLLISSIMA. (Leach.) *The Eider.*

SUB-FAMILY, Fuligulinæ, SWAINS. *Genus*, Somateria, LEACH.
Great black and white duck. EDWARDS, pl. 98.
Eider duck. PENN., *Arct. Zool*, ii., p. 553, No. 480. WILS., viii., p. 122, pl. 71, f. 2 and 3.
Canard eider (*Anas mollissima*). TEMM., ii., p. 843.
Anas mollissima. SAB., *Greenl. Birds*, p. 554, No. 27. RICHARDS., *App. Parry's Second Voy.*, p. 370, No. 31*.
Fuligula (Somateria) mollissima. BONAP. *Syn.*, No. 331.
Mittek. ESQUIMAUX. Dunter duck. HUDSON'S BAY RESIDENTS.

DESCRIPTION

Of a *male*, killed June 14, 1822, at Winter Island, lat. 66° 11½′ N.

COLOUR.—Circumference of the frontal plates, forehead, crown, and under eyelid, deep scotch-blue; hind head, nape, and temples, siskin-green. Stripe on the top of the head, cheeks, chin, neck, breast, back, scapulars, lesser coverts, curved tertiaries, sides of the rump, and under wing coverts, white; the tertiaries tinged with greenish-yellow, and the breast with buff. Greater coverts, quills, rump, tail and its coverts, and the *under plumage*, pitch-black; the ends of the quills and tail fading to brown. *Bill* oil-green. *Legs* greenish-yellow.

FORM typical. *Bill* prolonged on the lengthened depressed forehead into two narrow flat plates that are separated by an angular projection of the frontal plumage. *Nostrils* not pervious. Neck short and thick. *Wings* nearly three inches shorter than the tail. Hind toe attenuated posteriorly into a broad lobe.

The *female* is yellowish-brown, barred with black; the wing coverts black, edged with ferruginous; greater coverts and secondaries narrowly tipped with white; head and upper part of the neck marked with dusky stripes. *Under plumage* clove brown, with obscure darker blotches. The *young male* resembles the female, and is said not to attain its full plumage till the fourth year.

* The eggs of the Eider measure three inches in length, and two in breadth. They vary much in the obtuseness of their ends.—R.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	25	6	Length of bill to rictus .	2	10	Length of middle nail .	0	5½
,, of tail . .	4	6	,, of tarsus . .	2	1	,, of hind toe . .	0	9
,, of wing .	12	9	,, of middle toe . .	2	8	,, of its nail . .	0	4
,, of bill to front .	2	1						

—R.

[207.] 1. Oidemia perspicillata. (Stephens.) *Surf Duck.*

Sub-family, Fuligulinæ, Swains. *Genus*, Oidemia, Fleming.
Great black duck from Hudson's Bay. Edwards, pl. 155.
Anas perspicillata. Forster, *Phil. Trans.*, lxii., p. 417, No. 49.
Black duck (*Anas perspicillata*). Penn. *Arct. Zool.*, ii., p. 556, No. 483. Wils., viii., p. 49, pl. 67, f. 1, male.
Canard marchand (*Anas perspicillata*). Temm., ii., p. 853.
Oidemia perspicillata. Steph. *Gen. Zool.*, xii., 2, p. 219.
Fuligula perspicillata. Bonap. *Syn.*, No. 333.

DESCRIPTION

Of a *male*, killed at Fort Franklin.

Colour, velvet-black, with a reddish reflexion. Throat brownish. A broad white band between the eyes, and a triangular patch of the same on the nape. *Bill* reddish-orange, the unguis paler; a square black spot on the lateral protuberance. *Legs* orange; webs brown.

Form.—*Bill* much like that of *Oidemia fusca*, but the lateral protuberances are naked and horny, and the central one is feathered farther down. The *laminæ* are distant, and the lower ones particularly prominent, with cutting edges. As in the other *Oidemiæ*, the bill and forehead are inflated, causing the head to appear lengthened and the crown depressed. The *nostrils* are rather large, and nearer to the point than to the rictus.

Female browner; under plumage, in particular, paler; back and wing-coverts narrowly edged with grey; breast, flanks, and ears, with some whitish edgings. *Bill* black; its base not so much inflated, and the nostrils smaller than in the male.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	24	0	Length of bill above . .	1	4⅛	Length of middle toe .	2	4
,, of tail . .	3	9	,, of bill to rictus .	2	7	,, of its nail . .	0	4½
,, of wing . .	9	6	,, of tarsus . .	1	3	,, of outer toe .	2	2

—R.

[208.] 2. Oidemia fusca. (Fleming.) *Velvet Duck.*

Sub-family, Fuligulinæ, Swains. *Genus*, Oidemia, Fleming.
Velvet duck (*Anas fusca*). Penn. *Arct. Zool.*, ii., p. 555, No. 482. Wils., viii. p. 137, pl. 72, f. 3.
Fuligula (Oidemia) fusca. Bonap. *Syn.*, No. 335, p. 390.
Mookataw-sheep. Chippeways.

DESCRIPTION

Of a *male*, killed at Fort Franklin.

Colour pitch-black, deepening to raven-black on the crown, nape, and rump; frontal fea-

thers edged with pale brown; under eyelid and *speculum*, which extends to all the secondaries and the tips of their coverts, white; inside of the primaries and their inner coverts yellowish-grey. *Bill* orpiment orange; protuberance between the nostrils, the margins, and posterior part of the under mandible, black. *Irides* greenish-white. *Legs* scarlet, with black webs.

Form, typical.—*Bill* very short and broad, narrowed towards the end, where it has a large *unguis*. *Nostrils* large, oval, pervious, opening into a protuberance, which forms part of the forehead, that is, it is feathered posteriorly. *Toes* long; the outer one exactly equal to the middle one, including the nails*; the inner one three-quarters of an inch shorter.

The *Female* resembles the male, but is smaller, and the plumage browner. Scapulars very narrowly edged with broccoli-brown. No white mark beneath the eye, but the speculum like that of the male. *Bill* black, slightly inflated at the base; the unguis bluish.

Dimensions.

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	25	6	Length of bill above	1	7	Length of middle toe	3	10
,, of tail	4	0	,, of bill to rictus	2	8	,, of its nail	0	4½
,, of wing	10	9	,, of tarsus	1	10½	,, of outer toe	3	11½
			Extent of wings	36 inches.				

—R.

[209.] 3. Oidemia Americana. (Swainson.) *American Scoter.*

Sub-family, Fuligulinæ, Swains. *Genus*, Oidemia, Fleming.
Scoter duck (*Anas nigra*). Penn. *Arct. Zool.*, ii., p. 556, No. 484?
Fuligula (Oidemia) nigra. Bonap. *Syn.*, p. 390, No. 334.
Cuscusitatum. Cree Indians. Whistling duck. Hudson's Bay Residents.

Ch. Sp. Oidemia Americana, *tota fulignea, rostro nigro pone apicem contracto; gibbositate maxillæ basali totâ aurantiacâ, naribus rubescentibus.*

Sp. Ch. American Scoter, entirely sooty black; bill contracted just before the tip, black, except the basal protuberance of the upper mandible, which is entirely orange; nostrils red.

Whether this new species be extremely local, or whether it has merely been confounded with the European *O. nigra*, are questions we cannot at present answer. That it is, however, not only perfectly distinct as a species, but even of a different type to that of *O. nigra*, is manifest in the shape of the bill. In this, the sides of the nail at the end of the upper mandible are suddenly narrowed—thus showing a very close affinity to *O. fusca*, which leads, by means of *O. perspicillata*, to the genus *Somateria*; whereas in the European *O. nigra* the margin at this part of the bill presents no such sinuosity or contraction, but assumes the curved and more dilated form of the typical *Fuligulæ*; and we have thus the two typical sub-generic forms of the genus. This accords, in fact, with

* The outer nail being shorter than the middle one, the outer toe is consequently, when the nails are excluded, the longest.—R.

the whole theory which we have elsewhere intimated on the natural arrangement of the family. It is clear, from an inspection of Wilson's plate, that the true *O. nigra* is also found in America, since the colouring he has given to the bill perfectly accords with the English specimens in the British Museum. In *O. nigra* the sides of the protuberance and a line in the middle are black, while the orange spreads far beyond the nostrils towards the tip. In our new species, the whole of the protuberance, on the contrary, is orange, and this colour does not extend beyond the nostrils.

DESCRIPTION

Of a *male*, killed at Hudson's Bay, lat. 57°, agreeing with others in the British Museum sent from Hudson's Bay.

Colour and size closely resembling *O. nigra*, except in the bill, which has already been described. *Feet* in the dead bird entirely black.

Form, typical. *Bill* contracted on the sides of the nail. *Nostrils* opening half way between the base and tip of the upper mandible*.

Dimensions.

	Inch.	Lin.		Inch.	Lin.
Length, total	19	0	Length of tail from the base	3	3½
,, of bill from rictus	2	0	,, of tarsus	1	2½
,, from rictus to end of nostril	1	1½	,, of middle toe	3	0
,, of wing	8	6	,, of hind toe	0	10

—Sw.

[210.] **1. Fuligula valisneria.** (Bonap.) *Canvas-back.*

Sub-family, Fuliguliæ, Swains. *Genus*, Fuligula, Ray.
Canvas-back Duck (*Anas valisneria*). Wils., viii., p. 103, pl. 70, f. 3.
Anas valisneriana (*Canvas-back Duck*). Sab. *Frank. Journ.*, p. 699.
Fuligula valisneria. Bonap. *Syn.*, p. 392, No. 338.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May 3, 1827.

Colour.—Region of the bill, top of the head, chin, base of the neck, and adjoining parts of the breast and back, rump, upper and under tail coverts, pitch-black; sides of the head and the neck reddish-orange; middle of the back, scapulars, wing coverts, tips of the secondaries, tertiaries, flanks, posterior part of the belly, and thighs, greyish-white, finely undulated with hair-brown; primaries and their coverts hair-brown, their tips darkest; secondaries ash-grey, tipped with white; the two adjoining tertiaries edged with black. *Belly* white, faintly undulated on the medial line. In some specimens, the white parts are glossed with ferruginous. *Bill* and *legs* blackish-brown.

Form.—*Bill* lengthened, the depressed frontal angle longer, the nostrils farther from the front, and the unguis differently shaped and smaller than in *F. ferina*; the *upper lamina* flat, cuneate, not prominent, and confined within the margin of the mandible. The bill and

* In *O. nigra* the aperture of the nostrils is placed at one-third the length of the bill.

head of the Canvas-back approach somewhat to the form of the *Pintail Duck*, being much lengthened, and of equal breadth throughout. *First quill* the longest.

Female.—Ground colour of the upper plumage and flanks liver-brown; sides of the head, neck, and breast, ferruginous; shoulders, shorter scapulars, and under plumage, edged with the same. Middle of the back and wing coverts clove-brown, finely undulated with greyish-white. There are no undulated markings on the tertiaries and secondaries, and only a few on the tips of the scapulars. *Bill* as in the male; the neck more slender.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	24	6	Length of bill above . .	2	4	Length of tarsus . .	1	10
,, of tail . .	2	9	,, of bill to frontal angle	2	10	,, of middle toe .	2	10½
,, of wing . .	9	6	,, of bill to rictus .	2	8	,, of outer toe .	3	0

—R.

[211.] 2. Fuligula ferina. (Stephens.) *The Pochard.*

Sub-family, Fuligulinæ, Swains. *Genus*, Fuligula, Ray.
Pochard Duck. Penn. *Arct. Zool.*, ii., p. 560, No. 491.
Red-headed Duck (*Anas ferina?*). Wils., viii., p. 110, pl. 70, f. 6.
Canard milouin (*Anas ferina*). Temm., ii., p. 868.
Fuligula ferina. Bonap. *Syn.*, p. 31, No. 339.

DESCRIPTION.

Colour.—Head and neck brilliant reddish-orange; base of the neck, breast, fore part of the back, rump, and upper and under tail coverts, pitch-black; scapulars, interscapulars, flanks, thighs, and vent, finely undulated with white and clove-brown; belly whitish, with faint lines; posterior part of the back blackish-brown, partially undulated with fine grey lines. *Wings* hair-brown; the secondaries bluish-grey, narrowly tipped with white, and the two adjoining tertiaries edged with black: axillary feathers and under coverts pure white. *Bill:* upper mandible light blue; its tip, a narrow belt round its base, and the under mandible, black. *Legs* black.

Form.—*Bill* rather longer than the head, but considerably shorter, in proportion, than that of the last; the upper *laminæ* lying entirely within the edges of the mandible; *epidermis*, when dry, wrinkled near the *unguis*. *Tail* very short, and, like that of the rest of the American *Fuligulæ*, consisting of fourteen feathers; the lateral ones graduated. First quill feather the longest.

Female, liver-brown above, with pale edgings; forehead, base of the neck, sides of the breast, and flanks, chestnut, edged with yellowish-brown. Chin, throat, and fore part of the belly, greyish-white. Wings, bill, and legs as in the male.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	22	0	Length of bill above . .	1	11	Length of tarsus .	1	7½
,, of tail . .	2	9	,, of bill to frontal angle	2	4	,, of middle toe .	2	4½
,, of wing . .	9	0	,, of bill to rictus .	2	3	,, of outer toe .	2	5

—R.

[212.] 3. Fuligula marila. (Bonap.) *The Scaup Duck.*

Sub-family, Fuligulinæ, Swains. *Genus*, Fuligula, Ray.
Anas marila. Forst. *Phil. Trans.*, lxii., p. 413, No. 29.
Scaup Duck (*Anas marila*). Penn., *Arct. Zool.*, ii., p. 565, No. 498.
Wils., viii., p. 84, pl. 79, f. 3.
Fuligula marila. Bonap. *Syn.*, p. 392, No. 340.
Tawquawgew-'sheep. Crees and Saulteur Indians.

DESCRIPTION

Of a *male*, killed on the Saskatchewan.

Colour.—Head and upper part of the neck black, reflecting deep violet and green; lower part of the neck, posterior part of the back, the breast, and under tail coverts, pitch-black; scapulars and interscapulars greyish-white, rather coarsely undulated with black. *Wings* hair-brown, the primaries paler in the middle; the secondaries white, with brown tips; the tertiaries glossed with green; and the lesser coverts and inner tertiaries finely dotted or undulated with white. *Belly* greyish-white, mixed with greyish-brown posteriorly; flanks pure white, the tips slightly undulated. *Bill* greyish-blue. *Irides* yellow. *Legs* blackish-brown.

Form, typical.—*Bill* rather shorter than the head, wide, much depressed and obviously broadest before the nostrils; pitted near the point; the unguis small and distinct, as in the two last species. *Laminæ* strong, cutting: upper ones entirely within the margin of the mandible. Head rather large. *Wings* an inch and a quarter shorter than the tail; first quill the longest.

Our specimens are smaller than English ones killed in the winter, the head, bill, wings, and legs, in particular, being proportionally smaller, and the bill less high at the base.—A *variety*, nearly corresponding with the English one in size, is also found in the fur-countries, where it is distinguished by the epithet of "Keetchee (bigger) tawquawgew-'sheep;" but an attentive examination of a number of specimens disclosed no peculiarities which could characterise it as a distinct species, except its size*. The undulated markings on the back and wings are darker and less extended than in the English specimens.

Dimensions.

	Small var. Inch.	Lin.	Large var. Inch.	Lin.	English. Inch.	Lin.		Small var. Inch.	Lin.	Large var. Inch.	Lin.	English. Inch.	Lin.
Length, total	18	0	21	0	20	0	Length of tarsus	1	4	1	6	1	6
,, of tail	2	8	3	0	2	8	,, of middle toe	2	1	2	5½	2	4¼
,, of wing	7	9	8	10	8	10	,, of middle nail	0	4	0	4¼	0	4
,, of bill above	1	6½	1	10	1	9½	,, of hind toe	0	6	0	7¼	0	7
,, of bill to frontal angle	1	9	2	1½	2	1	,, of hind nail	0	1¾	0	1½	0	2
,, of bill to rictus	2	1	2	6	2	4½							

—R.

* One of these varieties (if such they be) is common upon the lakes of Mexico.—Sw.

[213.] 4. Fuligula rufitorques. (Bonap.) *Ring-necked Duck.*

Sub-family, Fuligulinæ, Swains. *Genus*, Fuligula, Ray.
Tufted Duck (*Anas fuligula*). Wils., viii., p. 60, pl. 67, f. 5; male*.
Fuligula rufitorques. Bonap. *Syn.*, p. 393, No. 341.
Cuskeetaw-sheep. Cree Indians and Chippeways.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May 7, 1827.

Colour.—Head and greater part of the neck greenish-black, reflecting deep violet-purple; beneath which a dark chestnut-brown collar. Base of the neck, whole dorsal plumage, tertiaries, greater coverts, breast, vent, and under tail coverts, greenish-black; lesser coverts, primaries, and tail, blackish-brown; secondaries pearl-grey, narrowly tipped with white. Belly white, from which a crescentic curve to the shoulder; flanks and posterior part of the belly finely undulated with blackish-brown. *Bill* black; rictus, line round the base, and belt near the tip of the upper mandible, light blue. *Irides* deep yellow. *Legs* blackish-brown.

Form.—*Bill* formed on the model of the English *A. marila*, but rather smaller and not so wide; larger than that of the smaller variety of the American Scaup Duck. *Upper laminæ* flat, rather broad, and not cutting, their points acute and slightly curved backwards. Plumage of the *crown* and *hind-head* thick, and somewhat lengthened. *Wings* three inches shorter than the tail. *Tail* short; its feathers narrow, the lateral ones graduated.

Female.—Upper plumage dark-brown, edged on the top of the head, shoulders, scapulars, and breast, with chestnut: sides of the breast and flanks unmixed dark chestnut. Wings mostly hair-brown: speculum as in the male. Region of the bill, throat, and belly, greyish-white, speckled with brown; posterior part of the belly liver-brown. The band near the point of the bill fainter than in the male, and the line round the base scarcely perceptible. The greater extent of the flattened triangular part of the bill next the front serves to distinguish the female of this species from that of the Scaup Duck.—In the *young male* a year old, the belly is more clouded, the upper plumage wants the chestnut tints, and has a darker colour than in the female, and the brown collar is not formed.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	19	0	Length of bill above . .	1	10	Length of tarsus . .	1	4
,, of tail . .	2	6	,, of bill to upper angle	2	0	,, of middle toe . .	2	1½
,, of wing . .	7	3	,, of bill to rictus .	2	0	,, of outer web .	2	2

—R.

* The *Fuligula rufitorques* has no distinct crest like the European tufted duck (*F. crustata*, Bonap.) which Wilson could never have seen, otherwise he would not have confounded it with the American bird. Indeed the latter bears more resemblance to *F. marila*, the females of the two species being with difficulty distinguished.—R.

[214.] 5. Fuligula rubida. (Bonap.) *Ruddy Duck**.

Sub-family, Fuligulinæ, Swains. *Genus*, Fuligula, Ray.
Ruddy Duck (*Anas rubida*). Wils., viii., p. 125, pl. 71, f. 5, male; f. 6, young.
Anas rubida (*Ruddy Duck*). Sab., *Frankl. Journ.*, p. 700.
Fuligula (Oxyura) rubida. Bonap. *Syn.*, p. 390, No. 336.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, June, 1827.

Colour.—Upper surface of the head and the nape velvet-black; middle of the back and the tail brownish-black. Throat, neck, fore part of the back, rump, scapulars, and flanks, pure brownish-orange; sides of the head and the chin white. *Wings* unspotted hair-brown, the secondaries tipped with white. Base of the under plumage clove-brown, its tips shining white. *Bill* shining light blue. *Legs* brown.

Female.—Ground colour of the top of the head, and the parts which are reddish-orange in the male, blackish-brown; the crown tipped with chestnut, mottled with brown. Sides of the head brown, with an imperfect white patch. Neck clove-brown, mixed with chestnut. Under plumage and wings nearly as in the male; the lesser coverts sparingly sprinkled with grey specks.

Form.—*Bill* about equal in length to the small head, much depressed, and considerably dilated towards the point. *Unguis* very small, hooked, and minutely pectinated on its margin. *Upper laminæ* strong, and truncated like those of the *Mareca Americana*, but not projecting below the margin of the mandible; lower ones fine and crowded like those of the *Anas* (*Boschas*) *crecca*. *Nostrils* in the middle of the bill and near each other, situated in the anterior part of a large oval membrane. *Wings* very short and concave. *Tail* similar in form to that of a Cormorant, composed of sixteen narrow feathers; the tail coverts wanting or very short, and not to be distinguished from the adjoining plumage. *Vent* at the extremity of the body when the tail is raised. *Under plumage* very close; its tips of a peculiarly bristly texture.

Dimensions

Of the *male* and *female*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	19	0	Length of bill above . .	1	6½	Length of middle toe .	2	4
,, of tail . .	3	6	,, of bill to rictus .	2	0	,, of its nail . .	0	4½
,, of wing . .	5	6	,, of tarsus . .	1	4	,, of outer toe .	2	4½

—R.

* We suspect that this bird, and one or two others of similar form found by us in Tropical Brazil, will constitute a sub-genus, in which light it has been already viewed by the Prince of Musignano. We do not at present follow this talented ornithologist, because *Oxyurus* had been applied the previous year (1827) to a sub-genus of Creepers, and because we have not yet investigated the subordinate forms in the typical genus *Fuligula* with reference to those of *Anas*. The two groups, however, so beautifully represent each other, that some writers have taken this analogy for an affinity, by describing the Ruddy Duck as a true Shoveller.—Sw.

[215.] 1. Clangula vulgaris. (Leach.) *The Common Golden Eye.*

Sub-family, Fuligulinæ, Swains. *Genus*, Clangula, Boie, Leach.
Anas clangula. Forster. *Phil. Trans.*, lxii., p. 417. No. 48.
Morillon (*Anas glaucion*). Penn. *Arct. Zool.*, ii., p. 573. F. Young.
Golden Eye (*Anas clangula*). Idem, p. 557, No. 486. Wils., viii., p. 62, pl. 67, f. 6, male.
Canard garrot (*Anas clangula*). Temm., ii., p. 870.
Fuligula clangula. Bonap. *Syn.*, p. 393, No. 342.
Meesheh-pesqua-pewew. Cree Indians.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May, 1827.

Colour.—Head and two inches of the neck brilliant duck-green; fore-head and chin blackish-brown. Back, long scapulars, coverts bordering the wing, primaries, four outer secondaries, and the tertiaries pitch-black. A round patch beneath the lores, lower part of the neck, shoulders, outer scapulars, intermediate and greater coverts, seven posterior secondaries, and the whole under plumage, pure white, except the deep black edges of the long flank feathers, and the spaces round the thighs, which, with the tail, are broccoli-brown. *Bill* black. *Feet* orange. *Irides* golden yellow.

Form.—*Bill* high at the base, narrowed towards the point; the *laminæ* resembling those of *Fuligula valisneria*. *Nostrils* nearer to the tip than to the base. *Head* large; forehead high; occipital plumage lengthened. *Wings* moderately long, acute, two inches and a half shorter than the tail. First and second quills sub-equal and longest. *Tail* long (among the *Anatidæ*) graduated, the shafts slightly projecting. *Toes* long.

The *female* resembles that of the following species, differing only in the form of the bill.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	22	6	Length of bill above .	1	6½	Length of tarsus . .	1	6½
,, of tail . .	4	6	,, of bill to upper angle	2	0	,, of middle toe .	2	6
,, of wing . .	9	0	,, of bill to rictus .	2	4	,, of outer toe .	2	7

—R.

[216.] 2. Clangula barrovii. (Nobis.) *Rocky Mountain Garrot.*

Plate lxx.

Genus, Clangula.

Ch. Sp. Clangula Barrovii, *capite cervicoque superiori violaceis; pone rostrum utrinque crescenti albâ, speculo et fasciâ transversâ alæ albis fasciâ nigrâ separatis.*

Sp. Ch. Rocky Mountain Garrot. Head and upper part of the neck pansy-purple, with a large crescentic white mark before each eye. White speculum separated from the band on the coverts by a black stripe.

Plate lxvii.

Notwithstanding the general similarity in the form and markings of this bird and the Common Golden Eye, the difference in their bills evidently points them out to be distinct species. Exclusive of the specific characters, above noted,

CLANGULA BARROWII.

London Printed for John Murray, Bookseller to the Admiralty, Jan.y 1.st 1834

the Rocky Mountain Garrot is distinguished by the purer colour of its dorsal plumage, and the smaller portion of white on its wings and scapulars. Its long flank feathers are also much more broadly bordered all round with black. The bases of the greater coverts in the Golden Eye are black; but they are concealed and do not form the black band so conspicuous in *Anas Barrovii*. The specific appellation is intended as a tribute to Mr. Barrow's varied talents, and his unwearied exertions for the promotion of science *.—R.

DESCRIPTION
Of a *male*, killed on the Rocky Mountains.

Colour.—Head and two inches of the neck bright pansy-purple, with a greenish reflexion on the ears; forehead and chin brownish-black. Dorsal plumage, wings, and broad tips of the long flank feathers, mostly velvet-black. Crescentic patch from the rictus to the sides of the forehead, lower part of the neck, shoulders, tips of the outer scapulars, lower row of lesser coverts, tips of the greater coverts, six secondaries, and the under plumage, pure white; space round the thighs, the tail, and its lateral under coverts, broccoli-brown. *Bill* blackish. *Legs* orange; webs black.

Form.—*Bill* shorter and narrower towards the point than that of the Golden Eye, and the feathers of the forehead, instead of running to a point on the ridge of the bill as in the latter, terminate with a semicircular outline. The plumage also of the occiput and nape is longer, forming a more decided crest than in that species. *Wings* two inches and a half shorter than the tail.

Female.—Head and adjoining part of the neck umber-brown, without a white mark. Dorsal plumage pitch-black; its anterior part, particularly the shoulders and the base of the neck all round, edged with ash-grey. A white collar round the middle of the neck. Flanks clove-brown, edged with white. Intermediate coverts blotched with white and black; greater coverts white tipped with black. Secondaries as in the male. Both mandibles orange at the point, their tips and posterior parts black. *Feet* like the male.

DIMENSIONS
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	22	6	Length of bill above . .	1	4	Length of tarsus . .	1	7
,, of tail . .	4	3	,, of bill to upper angle	1	7	,, of middle toe .	2	6
,, of wing . .	9	6	,, of bill to rictus .	2	1½	,, of outer toe . .	2	6

—R.

* The custom of honouring naturalists by affixing their names to new species, was introduced by Linnæus, and exercised by him with scrupulousness and judgment. His disciples must also be praised for the same discretion. Wildenow (Prin. of Bot., p. 213) justly remarks, that "no monument of marble or brass is so lasting as this. It is the only way of perpetuating the memories of *true* Zoologists, or of those who have benefited the science." Latterly, however, the custom among us has been so much abused, that it may be questioned whether it expresses anything more than a mere compliment from the nomenclator. To bestow the same honour upon a mere collector, which is given to a Wilson, a Cuvier, or a Bonaparte, is at best injudicious; but to call all the new species in the museum of a learned society after the council and office-bearers of the current year, merely because they are *ex officio* promoters of Ornithology, is not only ludicrous, but, as we conceive, a total perversion of scientific justice. A great and pious divine, a skilful and eminent physician, or accomplished diplomatic character, can receive neither honour nor pleasure from such flattery. It behoves every true naturalist to set his face against such practices, and we shall, upon all occasions, pass over every name so misapplied. For ourselves, we have studiously sought to bestow this "honour" only where it was due. The name of Barrow, it is true, will not be solely indebted to us for its imperishable record. It will be associated by the future historian with the history and discoveries of Arctic America, Southern Africa, and China; with high benefits conferred upon the State; and with the *possession* and *encouragement* of zoological knowledge.—Sw.

[217.] 3. Clangula albeola. (Leach.) *Spirit Duck.*

Sub-family, Fuligulinæ, Sw. *Genus*, Clangula, Leach.
The little black and white duck. Edwards, pl. 100, male.
Anas albeola. Forster, *Phil. Trans.*, lxii., p. 416, No. 47.
Spirit duck (*Anas albeola*). Penn., *Arct. Zool.*, ii., p. 558, No. 487.
Buffel duck (*Anas bucephala*). Idem, p. 559, No. 489.
Buffel-headed duck (*Anas albeola*). Wilson, viii., p. 51, pl. 67, f. 2, male; f. 3, female.
Fuligula albeola. Bonap., *Syn.*, p. 394, No. 343.
Wakaishee-weesheep, Waw-haisheep, Wappano-'sheep. Cree Indians and Chippeways.

DESCRIPTION

Of a *male*, killed on the Saskatchewan, May, 1827.

Colour.—Forehead, region of the bill, nuchal crest, and upper sides of the neck rich duck-green, blending with the resplendent auricula-purple of the top of the head and throat. Broad band from the eye to the tip of the occipital crest, lower half of the neck, the shoulders, exterior scapulars, intermediate and greater coverts, outer webs of five or six secondaries, flanks, and under plumage to the vent, pure white. Back, long scapulars, and tertiaries, velvet-black; lesser coverts bordering the wing the same edged with white; primaries and their coverts brownish-black. Tail coverts blackish-grey; tail broccoli-brown. Vent and under tail coverts greyish. *Bill* bluish-black. *Legs* yellowish.—In many spring specimens, the under plumage is ash-grey.

Form.—*Bill* smaller, in proportion, than that of the common Garrot, and the nostrils nearer the base; but otherwise similar. *Head* large, with the upper part of the neck clothed in velvety plumage, rising into a short thick crest. *Wings* $2\frac{1}{4}$ inches shorter than the tail. *Tail:* lateral feathers graduated, three middle pairs even.

Female (killed same place, July 18) considerably smaller. Head and dorsal plumage dark blackish-brown; the fore part of the back, scapulars, and tertiaries, edged with yellowish-brown. Fore part of the neck, sides of the breast, flanks, and vent feathers, blackish-grey; breast and belly white, glossed with brownish-orange. White band on the ears and occiput much narrower than in the male. The white speculum is less perfect, and the whole of the lesser coverts and scapulars are unspotted blackish-brown. *Bill* and *feet* brownish. Total length $14\frac{1}{2}$ inches; of wing 6 inches; of tarsus 14 lines; and middle toe (excluding nail) 20 lines.

The *young males* resemble the females.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	16	0	Length of bill above .	1	1	Length of middle toe .	2	0
,, of tail . . .	2	9	,, of bill to rictus .	1	6	,, of its nail . .	0	$3\frac{1}{4}$
,, of wing . .	6	8	,, of tarsus . .	1	4	,, of outer toe . .	2	$1\frac{1}{2}$

Individuals differ considerably in size, the length of the folded wing varying nearly an inch. The above is medium sized. —R.

[218.] 4. Clangula histrionica. (Leach.) *Harlequin Duck.*

Sub-family, Fuligulinæ, Sw. *Genus*, Clangula, Leach.
Dusky and spotted duck. Edwards, pl. 99, female.
Anas histrionica (*Harlequin duck*). Forster, *Phil. Trans.*, lxii., p. 419, No. 52.
Harlequin duck (*Anas histrionica*). Penn., *Arct. Zool.*, ii., No. 490. Wils., viii., pl. 72, f. 4. Sowerby, *Brit. Misc.*, pl. 6.
Canard à collier ou Histrion (*Anas histrionica*). Temm., ii., p. 878.
Fuligula histrionica. Bonap. *Syn.*, p. 394, No. 345.
Painted Duck, also Mountain Duck. Hudson's Bay Residents. Lord. Newfoundlanders.
Pawawistick-weesheep (*Cascade duck*). Cree Indians. Pawawistic-quess. Chippeways.

DESCRIPTION

Of a male killed on the eastern declivity of the Rocky Mountains.

Colour.—Medial band from bill to hind-head, posterior part of the back, the rump and tail coverts, velvet-black; the head-band bounded behind the eye with ferruginous. Middle of the back, the wings, tail, and belly, mostly liver-brown. Nape and sides of the throat rich lavender-purple; fore part of the back and the breast glossed with the same, which also tinges the brown wing coverts. Large semicircular patch before the eye, round spot on the ears, lateral neck-stripe, collar lower down, broad crescent-shaped shoulder band, longitudinal stripes on the scapulars and tertiaries, one or two spots on the greater coverts, and a small spot on the lateral tail coverts, pure white, all bordered more or less broadly with velvet-black. *Speculum* black, glossed with indigo-blue. Flanks pure orange-brown. Vent brownish-black. *Bill* bluish-black. *Legs* blackish-brown.

Form.—*Bill* rather narrower and longer than that of *Harelda glacialis;* margins of the upper mandible straight, not hooked at the tip; *unguis* large, broadly oval; a small flap of naked skin at the rictus. *Wings* an inch and a half shorter than the tapering, pointed tail, which is long, as in the rest of the Garrots. Tail coverts very short. *Toes* not longer than those of *Cl. albeola*, though this is a much smaller bird. *Webs* extending to the points of the nails, which are small and rounded.

The *female* is dark liver-brown above; the quills and tail blackish-brown; the rump and the flank feathers that hang down over the thigh, a paler umber. A spot behind the ears, a smaller one on each side of the forehead, and some mottling under the eye, white. Upper part of the breast and the sides under the wings yellowish-brown, edged with brownish-grey. Rest of the *under plumage* greyish-white, broadly barred across the middle of each feather with clove-brown. She is much inferior in size to the male.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	20	0	Length of bill above . .	1	1	Length of middle toe .	2	0
,, of tail . .	4	4	,, of bill to rictus .	1	8	,, of its nail . .	0	3
,, of wing . .	8	0	,, of tarsus . .	1	6			

—R.

[219.] 1. Harelda glacialis. (Leach.) *Long-tailed Duck.*

Sub-Family, Fuligulinæ, Swains. *Genus*, Harelda, Leach.
Long-tailed Duck. Edw., pl. 156. May plumage, male, pl. 280.
Anas glacialis et hyemalis. Forst. *Phil. Trans.*, lxii., p. 418, No. 50.
Long-tailed Duck (*Anas hyemalis et glacialis*). Penn. *Arct. Zool.*, ii., p. 566, No. 501. Wils., viii. p. 93, pl. 70, f. 1, male, winter; f. 2, female.
Canard de miclon (*Anas glacialis*). Temm., ii., p. 860.
Anas glacialis (*Long-tailed Duck*). Sab. *Greenl. Birds*, p. 555, No. 28. Richards. *Append. Parry's Second Voy.*, p. 373, No. 33.
Fuligula glacialis. Bonap. *Syn.*, p. 395, No. 346.
Caccàwee, Canadian Voyageurs. South-southerly, United States.
Old Wives, and Swallow-tailed Ducks, Hudson's Bay Residents. Aldiggee-areeoo, Esquimaux.

The peculiar cry of this Duck is celebrated, in the songs of the Canadian voyageurs, by the epithet of "Caccàwee," which is expressed by "South-southerly" in the United States, and "Hahhaway" among the Crees. The long tail of the male gives to its flight the resemblance of that of a Swallow. The eggs of the Duck are pale greenish-grey, with both ends rather obtuse; they are twenty-six lines long and eighteen wide.

DESCRIPTION

Of a *male*, killed, May 1, 1826, on the Saskatchewan.

Colour.—The whole upper plumage, the two central pairs of tail feathers, and the under plumage to the fore part of the belly, brownish-black; the lesser quills paler. A triangular patch of feathers between the shoulders, and the scapulars, broadly bordered with orange-brown. Sides of the head from the bill to the ears ash-grey; eye stripe and posterior under plumage pure white. Flanks, sides of the rump, and lateral tail feathers, white, stained with brown; axillaries and inner wing coverts clove-brown. *Bill* black, with an orange belt before the nostrils. *Legs* dark brown.

Form.—*Bill* very short, high at the base; *unguis* strong and arched; *laminæ* distant, prominent, and cutting; the upper ones projecting considerably below the margin of the mandible, the lower ones, which are nearly as prominent as the upper ones, divided into two nearly equal rows by a horizontal fissure*. *Nostrils* large, situated nearer to the front than to the tip of the bill. Forehead high. Neck thickish. *Wings* an inch and a half shorter than the outer tail feathers, and nine inches and a half shorter than the central ones. *Tail* very long, of fourteen feathers; middle pair slender and tapering, six inches longer than the adjoining ones. *Toes* short, as in the Harlequin Duck; the nails rather longer than those of that bird.

Specimens killed a fortnight or three weeks *later in the season*, at Bear Lake, on their way to the breeding-places, differ in having a large white patch on the hind head and occiput, with scattered white feathers on the neck and among the scapulars; the sides under the wings pure pearl-grey, and the sides of the rump unstained white. Captain Sabine describes

* In the *Anatinæ* and *Fuligulinæ*, in general, the *laminæ* of the under mandible are crowned by a narrow, and often more prominent, row of more crowded laminæ; but in the Harlequin Duck this upper row approaches nearer to the size and form of the lower one; and in the Long-tailed Duck the two rows scarcely differ in magnitude.—R.

this state as the pure *breeding plumage;* but individuals, coloured like the one killed on the Saskatchewan are often seen at the breeding stations*.

Winter plumage of the *male*.—Head, neck, and scapulars, white; cheeks and chin ash-coloured; lateral neck stripe chestnut-brown. *Legs* yellowish. In other respects like the above.

Mature *female*, killed May 25, lat. 65½°.—*Upper plumage* and sides of the breast pale liver-brown, with dark centres; the wing coverts, scapulars, and hinder parts, mostly edged with white. Top of the head blackish-brown; its sides anteriorly broccoli-brown: ears and base of the neck below clove-brown. A spot at the base of the bill and a stripe behind the eye white. Throat and collar ash-grey. Tail feathers brownish-grey, edged with white, short, and worn.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	26	0	Length of bill to rictus .	1	7	Length of middle nail .	0	3½
,, of tail . .	10	0	,, of tarsus . .	1	3	,, of outer toe .	2	0
,, of wing . .	8	6	,, of middle toe .	1	11	,, of its nail . .	0	2½
,, of bill above .	1	0						

—R.

[220.] 1. Mergus merganser. (Linn.) *The Goosander.*

Sub-family, Merganinæ, Swains. *Genus*, Mergus, Linn.
Goosander (*Mergus merganser*). Penn. *Arct. Zool.*, ii., p. 537, No. 465.
Wils., viii., p. 68, pl. 68, f. 1 and 2.
Grand Harle (*Mergus merganser*). Temm., ii., p. 881.
Mergus merganser. Bonap. *Syn.*, p. 397, No. 347.
Seek. Cree Indians.

DESCRIPTION

Of a *male*, killed on the Saskatchewan.

Colour.—Head and adjoining half of the neck deep blackish-green; rest of the neck, all the lesser coverts but the humeral ones, the distal halves of the greater coverts, the lesser quills, exterior scapulars, and whole *under plumage*, rich buff-orange (which fades to white after the specimen has been exposed for a few months to the light). Fore part of the back, longer scapulars, humeral wing coverts, bastard wing, bases of the greater coverts, narrow borders of the tertiaries, and fourteen exterior quill feathers, velvet-black (changing to brown before moulting). Hinder part of the back, tail coverts, and tail, bluish-grey, deepening

* Mr. Edwards, surgeon of the Fury on Sir Edward Parry's second voyage, describes the Long-tailed Ducks killed on Melville Peninsula, between the 1st and 25th June, as follows:—"They had all a dark, silky, chestnut-brown patch on the side of the neck; a mixture of white in the black stripe from the bill to the crown; the crown and nape either entirely white, or mixed with black; scapulars and upper tail coverts edged with white; a broad white collar round the lower part of the neck, in some individuals tipped with black or brown; occasionally a white band on the breast. The colour of the belt on the bill varied from rose-red to violet."—R.

towards the shafts of the tail and its coverts to clove-brown. Sides of the rump white, undulated with blackish-brown. *Bill* vermilion-red on the sides, black above and below. *Legs* vermilion.

Form.—*Bill* armed with acute conical teeth pointing backwards: two acute serrated ridges on the palate. *Nuchal crest* short, not pendant, resembling the surrounding plumage. *Wings* three inches shorter than the tail.

Female.—Top of the head and crest of long slender feathers, mostly occipital, liver-brown; sides of the head and upper half of the neck ferruginous. *Upper plumage* clove-brown, with greyish edges. No white on the scapulars or lesser coverts; but the speculum nearly as in the male. Under plumage white; the fore part of the neck and flanks yellowish-grey, edged with white.

Dimensions.

	Male. Inch.	Lin.	*Female.* Inch.	Lin.		*Male.* Inch.	Lin.	*Female.* Inch.	Lin.
Length, total	31	0	25	0	Length of bill to rictus	3	2	3	0
,, of tail	6	0	3	3	,, from nostrils to tip	1	6	1	6
,, of wing	11	0	9	0	,, of tarsus	2	0	1	9
,, of bill above	2	4	2	1	,, of middle toe	2	6	2	2
,, of bill to frontal angles	2	10	——		,, of middle nail	0	4½	0	3½

—R.

The males vary four inches and more in length.

[221.] 2. Mergus serrator. (Linn.) *Red-breasted Merganser.*

Sub-family, Merganinæ, Sw. *Genus*, Mergus, Linn.
Red-breasted Goosander. Edw., pl. 95.
Red-breasted Merganser (*Mergus serrator*). Penn. *Arct. Zool.*, ii., p. 537, No. 466.
Wils., viii., p. 91, pl. 69, f. 2, male.
Mergus serrator. Sab., *Frankl. Journ.*, p. 702. Bonap. *Syn.*, p. 497, No. 348.
Kanwan-seek. Saulteur Indians.

DESCRIPTION

Of a *male*, killed on the Saskatchewan.

Colour.—Head, crest, adjoining half of the neck, medial line above to the back, fore part of the back, the shoulders, scapulars, lesser coverts bordering the wing, twelve exterior quills, tertiary coverts, posterior tertiaries, basal halves of the secondaries and of their coverts, with the narrow borders of the tertiaries, black; the sides of the head and the nape deeply glossed with duck-green. A broad neck collar, the wide centres of a tuft of black feathers on the shoulders, exterior scapular coverts, intermediate wing coverts, distal halves of the greater coverts and of the secondaries, the tertiaries, and the *under plumage*, pure white. Rump and tail coverts blackish-brown, minutely undulated with white; flanks more regularly and distinctly undulated with the same. *Tail* broccoli-brown. Breast and sides of the neck posteriorly brown, approaching to buff, striped on the margins and fringed on the tips with black. *Bill* orange on the sides and beneath: dark above. *Feet* brownish-orange.

Form.—*Bill* toothed, as in *M. merganser;* ridges on the palate less prominent. A *crest* of long and very slender feathers springing from the crown and occiput. *Upper mandible* less deep at the base than in the preceding species; its junction with the feathers of the forehead less indented.

Female under two feet long, scarcely to be distinguished from the female of the preceding species, except by the form of the line of junction of the plumage of the forehead with the bill, and the black bar crossing the speculum on the bases of the secondaries and extreme tips of the greater coverts.

Dimensions.

	Male. Inch.	Lin.	*Female.* Inch.	Lin.		*Male.* Inch.	Lin.	*Female.* Inch.	Lin.
Length, total	25	6	21	0	Length of bill to rictus	3	1	2	7
,, of tail	4	0	3	6	,, from nostrils to tip	1	7½	1	6
,, of wing	9	6	8	3	,, of tarsus	1	10	1	7
,, of bill above	2	4½	2	0	,, of middle toe	2	3	2	1
,, of bill to frontal angles	2	5	——		,, of its nail	0	4	0	4

—R.

[222.] 3. Mergus cucullatus. (Linn.) *Hooded Merganser.*

Sub-family, Merganinæ, Swains. *Genus*, Mergus, Linn.
The Round-crested Duck. Edw., pl. 360.
Hooded Merganser (*Mergus cucullatus*). Penn. *Arct. Zool.*, ii., p. 538, No. 467.
Wils., viii., p. 79, pl. 69, f. 1, male.
Mergus cucullatus. Sab. *Frankl. Journ.*, p. 703. Bonap. *Syn.*, p. 397, No. 349.
Keeneeconais-sheep, Algonquins. Omiska-sheep, Crees.

DESCRIPTION

Of a *male*, killed on the Saskatchewan.

Colour.—Top of the head, dorsal plumage, upper lesser coverts, quills, and tail, blackish-brown. Sides of the head, neck, bars on the shoulders, scapulars, tertiaries, and bases of the secondaries and greater coverts, greenish-black. Broad bar from behind the eye through the middle of the crest, alternate bars on the shoulder, tips of the greater coverts, exterior borders of the secondaries, central stripes on the tertiaries, and under plumage, white. Flanks finely undulated with yellowish-brown and black.

Form.—*Teeth* oblique, sharp edged, not conical. Rows of transverse furrows on the palate, but no acute ridges. *Crest* on the crown and nape long. *Wings* two inches and a half shorter than the tail.

Young.—Upper plumage browner; the white speculum and stripes on the tertiaries less perfect than in the adult. No black and white bars on the shoulder, nor white band behind the eye. The head, neck, and upper parts of the breast, soiled pale brown, with white edgings on the latter. Chin whitish. *Bill* black, orange beneath. There is scarcely any crest.

Dimensions
Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	20	0	Length of bill above .	1	8	Length of middle toe .	2	0
,, of tail . .	4	0	,, of bill to rictus .	2	0	,, of its nail . .	0	4
,, of wing . .	7	6	,, of tarsus . .	1	3			

—R.

[223.] 1. Cygnus buccinator. (Richardson.) *Trumpeter* Swan.*

Sub-family, Anserinæ, Swains. *Genus*, Cygnus, Auct.
Keetchee wapeeshew, Cree Indians.

Ch. Sp. Cygnus buccinator, *albus; rostro toto nigro etuberculato, rectricibus* 24, *pedibus nigris.*
Sp. Ch. Trumpeter Swan, white; head glossed above with chestnut; bill entirely black, without a tubercle; tail feathers 24; feet black.

This is the most common Swan in the interior of the fur-countries. It breeds as far south as lat. 61°, but principally within the Arctic circle, and in its migrations generally precedes the Geese a few days. A fold of its windpipe enters a protuberance on the dorsal or interior aspect of the sternum at its upper part, which is wanting both in the *Cygnus ferus* and *Bewickii*; in other respects, the windpipe is distributed through the sternum nearly as in the latter of these species †. It is to the Trumpeter that the bulk of the Swan-skins imported by the Hudson's Bay Company belong.

DESCRIPTION

Of a specimen, killed at Hudson's Bay, and now in the H. B. Museum.

Colour white, the forehead alone tinged with reddish-orange. *Bill*, *cere*, and *legs* entirely black.

Form.—*Bill* nearly resembling that of *C. ferus* in form, though longer and rather more depressed. *Wings:* third quill the longest. *Tail* consisting of twenty-four feathers.—A specimen, in the Zoological Museum, has the crown and cheeks bright chestnut.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	70	0	Length from nostrils to tip	2	7	Length of tarsus . .	4	6
,, of tail . .	9	6	,, of bill to rictus .	4	9	,, of middle toe .	5	9
,, of wing . .	26	0	,, of bill to eye .	6	0	,, of middle nail .	1	0‡
,, of bill above .	4	11						

—R.

* Lawson observes that there are two sorts of Swan in Carolina, the larger of which is called, from its note, the Trumpeter; and Hearne adds, "I have heard them, in serene evenings after sunset, make a noise not very unlike that of a French-horn, but entirely divested of every note that constituted melody, and have often been sorry that it did not forebode their death."

† Mr. Yarrell, whom I have consulted with respect to this species, intends to publish a more detailed description of the course of its windpipe through the sternum.—R.

‡ Dimensions of *Cygnus ferus*, from Mr. Yarrell.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	60	0	Length of bill above .	4	$4\frac{3}{4}$	Length of tarsus . .	4	0
,, of wing . .	25	6	,, of bill to eye .	5	3	,, of midd. toe and nail	6	6

[224.] 2. Cygnus Bewickii. (Yarrell.) *Bewick's Swan.*

Sub-family, Anserinæ, Swains. *Genus*, Cygnus, Auctor.
Cygnus Bewickii. Yarrell. *Linn. Trans.*, xvi., p. 445, Jan. 1830. Selby, *Illustr of Orn.*, vi, pl. 95*.

Ch. Sp. Cygnus Bewickii, *albus, rostro nigro pone nares aurantiaco, rectricibus* 18, *pedibus nigris.*
Sp. Ch. Bewick's Swan, white, bill yellow at the base posterior to the nostrils, 18 tail feathers, feet black.

This Swan breeds on the sea coast within the Arctic circle, and is seen in the interior of the fur countries on its passage only. It makes its appearance amongst the latest of the migratory birds in the spring, while the Trumpeter Swans are, with the exception of the Eagles, the earliest. It winters, according to Lewis and Clarke, near the mouth of the Columbia†. Captain Lyon describes its nest as built of moss-peat, nearly six feet long and four and three-quarters wide, and two feet high exteriorly; the cavity a foot and a half in diameter. The eggs were brownish-white, slightly clouded with a darker tint.

DESCRIPTION

Of a specimen, killed at Igloolik, lat. 66°, June 19, 1823.

Colour, pure white, except the crown, nape, and superior parts of the neck, which are deeply tinged with reddish-orange, and the belly, which is slightly glossed with the same. *Bill* black; *cere* orange (that colour entirely behind the nostrils). *Irides* also orange. *Feet* black—*Old* birds entirely white, and *young* ones grey.

Form.—Second and third quills equal and longest. *Tail* cuneiform, of eighteen feathers.

Dimensions‡.

	Inch.	Lin.		Inch.	Lin.		Feet.	Inch.
Length, total . .	55	0	Length of bill above .	3	6	Extent of wing . .	6	1
,, of wing . .	20	6	,, of tarsus . .	3	9	Weight	13¾ lbs.	
,, of bill to eye .	4	4½	,, of middle toe and nail	5	3			

—R.

* We know not whether we should attribute the first designation of this Swan to our friend Mr. Yarrell, or (as mentioned by our friends Sir W. Jardine and Mr. Selby) to Mr. Richard Wingate, of Newcastle-upon-Tyne. We have not, in fact, perused the whole of the statements on both sides; but as these will come before the public, the question may be decided by others.—Sw.

† "The Swans are of two kinds—the large and small. The large Swan is the same with the one common in the Atlantic States. The small differs from the large only in size and note; it is about one-fourth less, and its note is entirely different. These birds were first found below the Great Narrows of the Columbia, near the Chilluckittequaw nation. They are very abundant in this neighbourhood, and remained with the party all winter, and in number they exceed those of the larger species in the proportion of five to one."—Lewis and Clarke, *Journ.*, &c.

‡ From Mr. Yarrell's Paper.

[225.] 1. Anser albifrons. (Bechst.) *Laughing Goose.*

Sub-family, Anserinæ, Swains. *Genus*, Anser, Auct.*
The laughing goose. Edwards, pl. 153.
White fronted goose. Penn. *Arct. Zool.*, ii., p. 548, No. 476.
Oie rieuse ou à front blanc (*Anas albifrons*). Temm., ii., p. 821.
Anser albifrons. Bonap. *Syn.*, p. 376, No. 316.
Sasassquæ-pethesew. Cree Indians.

This Goose passes, at the same time or a little later than the Snow Goose, through the interior of the fur countries in large flocks to its breeding places, which are in the woody districts skirting the Mackenzie to the north of the sixty-seventh parallel, and also the islands of the Arctic Sea. It is not common on the coast of Hudson's Bay. The Indians imitate its call by patting the mouth with their hand, while they repeat the syllable *wah*. The resemblance of this note to the laugh of a man has given the trivial name to the species.

DESCRIPTION.

Colour.—Head and neck pale greyish-brown. Dorsal plumage clove-brown, with paler edges; secondaries tipped with white; primaries greyish-black, with white shafts. Front, region of the bill, eyelids, tail-coverts, and all the under plumage white, the belly blotched with deep black. *Bill* and *feet* orange; tip of the former flesh-coloured.—A specimen killed on the 17th of May at Fort Enterprise, had all the belly light wood-brown blotched with black.

Form.—*Bill* as long as the head, its depth at the base two thirds of its length; *commissure* curved and gaping, permitting the teeth to appear in the middle. Five or six rows of teeth on the palate. *Wings:* third quill the longest.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	27	0	Length of bill above .	2	4	Length of middle toe .	2	2
,, of tail . .	0	0	,, of bill to rictus .	2	4½	,, of its nail .	0	5
,, of wing . .	16	0	,, of tarsus . .	2	7½	Extent of wing . .	54	0

—R.

* As we have not yet analysed and determined the sub-genera or types of form, we shall make no attempt to designate them from theory alone.—Sw.

[226.] 2. Anser hyperboreus. (Bonap.) *Snow Goose.*

Sub-family, Anserinæ, Swains. *Genus*, Anser, Auct.
The Blue-winged Goose. Edwards, pl. 152. Young.
Anas nivalis (*Snow goose*). Forster, *Phil. Trans.*, lxii., p. 413, No. 45.
Snow goose. Penn. *Arct. Zool.*, ii., p. 549, No. 477.
Snow goose (*Anas hyperborea*). Wils., viii., p. 76, pl. 68, f. 3, male, and p. 89, pl. 69, f. 5, young.
White Brant. Lewis & Clark, iii., p. 58.
Anas hyperborea. Richards. *Append. Parry's Second Voy.*, p. 365, No. 28.
Anser hyperboreus. Bonap. *Syn.*, No. 315.
Wæwæ-oo or wapow-wæoo. Cree Indians. Cathcatew-wæwæoo. *The Young.*
Wavey. Hudson's Bay Residents. Kangokh (plur. kang-oot). Esquimaux.

The Snow Goose breeds in the barren grounds of Arctic America, in great numbers. The eggs, of a yellowish-white colour, and regularly ovate form, are a little larger than those of the Eider Duck, their length being three inches and their greatest breadth two. The young fly in the end of August, and by the middle of September all have departed to the southward. The Snow Goose feeds on rushes, insects, and in autumn on berries, particularly those of the *empetrum nigrum*. When well fed it is a very excellent bird, far superior to the Canada Goose in juiciness and flavour. It is said that the young do not attain the full plumage of the old bird before their fourth year, and until that period they appear to keep in separate flocks. They are numerous at Albany Fort, in the southern part of Hudson's Bay, where the old birds are rarely seen; and, on the other hand, the old birds in their migrations visit York Factory in great abundance, but are seldom accompanied by the young. The Snow Geese make their appearance in spring a few days later than the Canada Geese, and pass in large flocks both through the interior and on the coast.

DESCRIPTION

Of a *male* killed at Fort Enterprise, lat. 65°, June 1, 1821.

Colour, white. Quills pitch-black; their shafts white towards the base. *Head* glossed with ferruginous. *Irides* dark hair-brown. *Bill, feet,* and *orbits,* aurora-red; *ungues* of both mandibles livid.—The ferruginous tint occupies different portions of the head in different individuals, and in some extends to the neck and middle of the belly.

An *immature bird* has a few feathers on the crown and nape, the fore part of the back, ends of the scapulars, and some of their coverts, and the outer webs of the tail feathers greyish-brown, all tipped, and more or less edged, with white. Tertiaries and rest of the plumage as in the old bird. Some individuals deviate from the full plumage merely in the bastard wing and primary coverts retaining their grey colour; while in very young birds, part of the under plumage is also greyish-brown.

Form.—*Bill* shaped much like that of *A. albifrons.*

Dimensions
Of a *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	32	0	Length of bill to frontal angle	2	7	Length of middle nail .	0	5½
,, of tail . .	6	0	,, of bill to rictus .	2	3	,, of hind toe . .	0	5
,, of wing . .	16	9	,, of tarsus . .	3	0	,, of hind nail .	0	3½
,, of bill above . .	2	3	,, of middle toe .	2	4			

—R.

[227.] 3. Anser Canadensis. (Bonap.) *Canada Goose.*

Sub-family, Anserinæ, Swains. *Genus*, Anser, Auct.
The Canada Goose. Edwards, pl. 151.
Canada Goose. Penn. *Arct. Zool.*, ii., p. 544, No. 471. Wils., viii. p. 53, pl. 67, f. 4.
Anser Canadensis. Bonap., *Syn.*, p. 377, No. 318.
Neescah or mistehay-neescah. Cree Indians.
L'Outarde. French Canadians. Bustard. Hudson's Bay Settlers.

The arrival of this well-known bird in the fur countries is anxiously looked for and hailed with great joy by the natives of the woody and swampy districts, who depend principally upon it for subsistence during the summer. It makes its first appearance in flocks of twenty or thirty, which are readily decoyed within gun-shot by the hunters, who set up stales and imitate its call. Two or three or more are so frequently killed at a shot, that the usual price of a goose is a single charge of ammunition. One goose, which, when fat, weighs about nine pounds, is the daily ration for one of the Company's servants during the season, and is reckoned equivalent to two snow geese, or three ducks, or eight pounds of buffalo and moose meat, or two pounds of pemmican, or a pint of maize and four ounces of suet. About three weeks after their first appearance, the Canada geese disperse in pairs throughout the country, between the 50th and 67th parallels, to breed, retiring at the same time from the shores of Hudson's Bay. They are seldom or never seen on the coasts of the Arctic Sea. In July, after the young birds are hatched, the parents moult, and vast numbers are killed in the rivers and small lakes when they are unable to fly. When chased by a canoe and obliged to dive frequently, they soon become fatigued and make for

Note.—Hearne describes a goose under the name of *Horned Wavey*, which does not appear to be noticed by any other writer. His words are :—"This delicate and diminutive species of Goose is not much larger than the Mallard Duck. Its plumage is delicately white, except the quill feathers, which are black. The bill is not more than an inch long, and is studded at the base with little knobs about the size of peas, but more remarkably so in the males. The bill and feet are of the same colour with those of the Snow Goose. This species is very scarce at Churchill, and I believe is never found at any of the southern settlements; but about three hundred miles to the N.W. of Churchill, I have seen it in as large flocks as the Snow goose. The flesh of this bird is delicate; but it is so small, that I ate *two one night for supper*."—Hearne, *Journ.*, p. 442. Lewis and Clark also give descriptions of several small Geese that frequent the coast of the Pacific, which we cannot reconcile with any of our species.—R.

the shore with the intention of hiding themselves, but as they are not fleet, they fall an easy prey to their pursuers. In the autumn they again assemble in flocks on the shores of Hudson's Bay for three weeks or a month previous to their departure southwards. It has been observed that in their migrations the Geese annually resort to certain passes and resting places, some of which are frequented both in the spring and autumn, and others only in the spring. The Canada Goose generally builds its nest on the ground, but some pairs occasionally breed on the banks of the Saskatchewan in trees, depositing their eggs in the deserted nests of ravens or fishing eagles. Its call is imitated by a prolonged nasal pronunciation of the syllable *wook* frequently repeated.

DESCRIPTION.

Colour.—Head, two thirds of the neck *, greater quills, rump, and tail, pitch-black. Back and wings broccoli-brown, edged with wood-brown. Base of the neck before and the under plumage yellowish-grey with paler edges; flanks and base of the plumage generally brownish-grey. A few feathers about the eye, a large kidney-shaped patch on the throat, the sides of the rump, and upper and under tail coverts, pure white. *Bill* and *feet* black.

Form.—*Bill* shaped more like that of the Barnacle than that of the two preceding geese. Neck long and slender.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	41	0	Length of bill above .	2	2	Length of middle toe .	2	11
,, of tail . .	9	0	,, of bill to rictus .	2	6	,, of its nail . .	0	6½
,, of wing . .	19	6	,, of tarsus . .	3	7			

Individuals differ considerably in dimensions: one having the same length of wing with the preceding, has a tarsus four inches long; middle toe 3½ inches, its nail 7½ lines.—R.

[228.] 4. Anser bernicla, (Bonap.) *Brent Goose.*

Sub-family, Anserinæ, Swains. *Genus*, Anser, Auct.
Brent Goose. Penn. *Arct. Zool.*, ii., p. 551, No. 478.
Oie cravant (*Anas bernicla*). Temm., ii., p. 824.
The Brant (*Anas bernicla*). Wils., viii. p. 131, pl. 72, f. 1.
Anas bernicla (*Brent Goose*). Richards. *App. Parry's Second Voy.*, p. 367, No. 29.
Anser bernicla. Bonap. *Syn.*, p. 378, No. 320.
Weetha-wæwæ. Cree Indians. Neerlook. Esquimaux.

The Brent breeds in numbers on the coasts and islands of Hudson's Bay and the Arctic Sea, and is rarely seen in the interior. It feeds much on the *ulva*

* The black part of the neck measures 11 inches from the occiput.

lactuca, and other marine plants thrown up by the tide, by which its flesh acquires a strong taste. It leaves its breeding quarters in September, and lingers on the shores of New Jersey until December, when it goes further to the southward.

DESCRIPTION

Of a *female* killed 21st June, on Melville Peninsula.

Colour.—Head, neck, shoulders, and swell of the breast, greyish-black; quills, tertiaries, rump, and tail, greenish-black; back, scapulars, and outer and inner wing coverts, clove-brown, margined with yellowish-grey. A mottled spot on the side of the neck, tail coverts above and below, sides of the rump, and vent, white. Belly yellowish-grey. Flanks transversely barred with bluish-grey and white. *Bill* and *feet* black.

Form.—*Bill* small, shorter than the head. Tail coverts as long as the tail, which is much rounded.

Dimensions

Of the *female*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	24	6	Length of bill to rictus .	1	5½	Length of outer toe .	1	9
,, of tail .	4	6	,, from tip to nostrils .	0	9	,, of outer nail .	0	3½
,, of wing . .	13	3	,, of tarsus . .	2	2	,, of hind toe . .	0	4½
,, of bill to front .	1	3½	,, of middle toe . .	1	10	,, of hind nail .	0	4
,, of bill to frontal angle	1	6	,, of middle nail .	0	4½			

—R.

[229.] 5. Anser Hutchinsii. (Richards.) *Hutchins's Barnacle Goose.*

Sub-family, Anserinæ, Swains. *Genus*, Anser, Auct.
Canada Goose. Hearne, *Journ.*, p. 439.
Anas bernicla, β. Richards. *Append. Parry's Second Voy.*, p. 368.
Apisteeskeesh. Cree Indians.

Ch. Sp. Anser Hutchinsii *rostro nigro sub-sesquiunciali, fasciâ gulari reniformi albâ, dimidio colli nigro, pectore albo.*

Sp. Ch. Hutchins's Goose, with a black bill, less than an inch and a half in length; a white kidney-shaped patch on the throat; upper half of the neck black; the breast white.

On Captain Parry's second voyage, several flocks of Geese were seen on Melville Peninsula, which were thought by the officers of the Expedition to be the *Anser leucopsis* or Barnacle, but which the Esquimaux said were the males of the *Anser bernicla*, that, during the breeding-season, separate themselves from the females. A number of specimens were secured, all of which proved to be males, and, in the *Appendix* above quoted, I described them merely as a variety of the Brent; but I have since obtained information, which leads me to believe that they actually belong to a distinct species, hitherto confounded with the *A. Canadensis*. They are well known in Hudson's Bay by the Cree name of *Apistiskeesh*, and are generally thought by the residents to be merely

a small kind of the Canada Goose, as they have the white kidney-shaped patch on the throat, which is deemed peculiar to that species*. Their habits, however, are dissimilar; the Canada Geese frequenting the fresh-water lakes and rivers of the interior, and feeding chiefly on herbage; while the *Apistiskeesh* are always found on the sea coast, feeding on the marine plants and the *molluscæ* which adhere to them, whence their flesh derives a strong fishy taste. In form, size, and general colours of the plumage, the new species more nearly resembles the Brent, than the Canada Goose. It differs, however, from the former in having the white kidney-shaped patch on the throat and cheeks, in wanting the spotted white mark on the side of the neck, in the black colour terminating four inches higher†, instead of including the swell of the upper parts of the back and breast, and in the white of the vent being more extended: it is totally unlike *A. leucopsis* in plumage, and has a larger bill. We have designated the *Apistiskeesh* by the name of *Hutchinsii*, in honour of a gentleman from whom Pennant and Latham derived most of their information respecting the Hudson's Bay birds.

DESCRIPTION

Of a *male*, killed, June 19, 1822, on Melville Peninsula, and now in the Edinburgh Museum.

Colour.—Head, neck, rump, and tail pitch-black; back and both surfaces of the wings clove-brown, the edges of the feathers yellowish-grey and worn. A speck before the eye, the under eyelid a kidney-shaped patch on the throat similar to that of *A. Canadensis*, terminating acutely on each side of the hind head, a band passing over the upper tail coverts and forwards by the sides of the rump, breast, vent, and under tail coverts, all white; abdomen yellowish-grey, edged with white; flanks transversely barred with bluish-grey and white. *Bill* and *feet* black.

Form.—*Bill* higher than wide at the front, shaped much like that of *A. bernicla*, but wider, the commissure straighter, and the teeth of the upper mandible not appearing externally. Feathers of the front joining the bill in a semicircular line. *Wings:* first and third quills nearly equal to the second, which is the longest; the spur at the angle of the wing nearly as much developed as in *A. bernicla*, but less than in *A. Canadensis* and *A. leucopsis*. *Tail*, of fourteen feathers, rounded laterally; the middle pair shorter than the adjoining ones and scarcely exceeding the outer ones.

Dimensions

Of the *male*.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	25	0	Length of bill to front	1	8½	Length of middle nail	0	4
,, of tail	5	6	,, of bill to frontal angle	1	9	,, of outer toe	1	9
,, of wing	14	0	,, of bill to rictus	1	5	,, of outer nail	0	4½
,, of neck	5	6	,, of tarsus	2	6	,, of hind toe	0	4½
,, of body	12	0	,, of middle toe	1	11	,, of hind nail	0	4

—R.

* Some mistake occurs in Forster's account of the Canada Goose (*Phil. Trans.*, lxii.); the habits of *A. Hutchinsii* (Small Grey Goose of Graham) being ascribed to the *A. Canadensis;* while the Large Grey Goose, mentioned in the same passage, is undoubtedly the Canada Goose, which we know to be the only species that breeds abundantly about Severn River.—R.

† The black extends six inches from the occiput down the neck.—R.

[230.] 1. Pelecanus onocrotalus. (Linn.) *White Pelecan.*

Genus, Pelecanus, Linn.
Pelecanus onocrotalus, var. Forst. *Phil. Trans.*, lxii.
Great Pelecan. Penn. *Arct. Zool.*, ii., p. 578, No. 505.
Pelecanus onocrotalus. Bonap. *Syn.*, p. 400, No. 351.

Pelecans are numerous in the interior of the fur-countries up to the sixty-first parallel; but they seldom come within two hundred miles of Hudson's Bay. They deposit their eggs usually on small rocky islands, on the brink of cascades, where they can scarcely be approached; but they are otherwise by no means shy birds. They fly low and heavily, usually in flocks of from six to fourteen, sometimes abreast, at other times in an oblique line; and they often pass close over a building, or within a few yards of a party of men, without exhibiting any signs of fear. They haunt eddies under waterfalls, and devour great quantities of carp and other fish. When gorged with food, they doze on the water, and may be easily captured, as they have great difficulty in taking wing at such times, particularly if their pouches be loaded with fish. Though they can perch on trees, they are most generally seen either on the wing or swimming. Some specimens, apparently in mature plumage, have the bill quite smooth above; but individuals have a long thin bony process, about two inches high, springing from the ridge of the upper mandible. Similar processes existed in the specimens commented upon by Pennant and Forster, which were brought from Hudson's Bay; but no such appearances have been described as occurring on the bills of the White Pelecans of the Old Continent.

DESCRIPTION

Of a specimen, killed on the Missinippi, lat. 56°.

Colour, white, tinged with peach-blossom-red; breast yellowish; bastard wing and quills black. *Bill* bluish, the margins and *unguis* reddish. Naked skin round the eye and base of the upper mandible, and the feet, flesh-coloured; sub-maxillary pouch yellow.

Form.—The hind head is crested; the sub-maxillary pouch is large, and is distended when the mouth is opened by the elasticity of the *rami* of the *os hyoides*. *Neck* covered with down. Second quill the longest; first considerably longer than the fifth. *Middle nail* entire. *Total length* six feet. —R.

[231.] 2. Pelecanus (Carbo) dilophus. (Sw.) *Double-crested Corrorant.*

Family, Pelecanidæ, Swains. *Genus*, Pelecanus, Linn. *Sub-genus*.(?) Carbo, Meyer, Temm.

Ch. Sp. *Rectricibus duodecem, rostro 3½ uncias longo, cristâ post oculum utrumque.*

Sp. Ch. Tail of twelve feathers; bill three inches and a half long; a crested tuft of feathers behind each eye.

We cannot reconcile this bird with any of those described by Professor Temminck or the Prince of Musignano, the only two ornithologists who have accurately discriminated the northern species of this neglected group. By having *twelve* instead of *fourteen* feathers in the tail, it is at once distinguished from *Carbo cormoranus*, Temm.: the shortness of its tail separates it again from *C. graculus*, Temm. Its crest, which is not "*élevé sur le milieu du crâne, entre la distance des yeux**," prevents it from being confounded with *C. cristatus:* this crest, moreover, is double. This latter circumstance, and its superior size, distinguish it at once from *C. pygmæus;* while the account of the *Pelecanus Africanus*, Linn., introduced by the Prince of Musignano into his *Synopsis* (p. 404), is too vague and general to be applied to our species. We shall not again attempt to unravel the synonymes of compilers, but merely add, that our specimen is of an adult bird, in fine and matured plumage.—Sw.

DESCRIPTION

Of a specimen, killed on the Saskatchewan, May, 1827.

Form, typical. Middle toe strongly pectinated. The naked space on the sides of the head is small; it extends from the bill to the eye, which it hardly encircles; it occupies a narrow margin at the rictus, and then makes a curve downwards under the chin, which it crosses, leaving a naked space three inches and a quarter in length, when measured to the base of the gonys of the under mandible. Immediately behind the eye is a conspicuous crest or tuft of narrow slender feathers, many of which are one inch and a quarter long. The tail is moderate, of twelve feathers, each of which is graduated: lesser quills slightly mucronated.

Colour.—*Bill* blackish-brown. *Orbits* and naked skin round the chin yellow. Over the eye is a line of white dots. General plumage, both above and below, deep bluish-black, glossed with obscure green: this colour, as usual, is confined to the margins only of the feathers on the upper part of the back, the lesser wing coverts, and the tertials, the middle of which are light hair-brown; quills much darker. *Tail* and *feet* (in the dried specimen) black.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total, about .	33	0	Length of wing .	12	0	Length of tarsus . .	2	3½
,, of bill from angle of the mouth . .	3	6	,, of middle tail feather	6	6	,, of long toe and nail	4	1
,, of bill from the front	2	1	,, of outer feather .	4	9	,, of hind toe and nail	1	7

—Sw.

* Temminck, *Manuel*, Second Edit., ii., p. 900.

[232.] 1. Colymbus glacialis. (Linn.) *Great Northern Diver.*

Genus, Colymbus, Linn.
Colymbus glacialis. Forst. *Phil. Trans.*, lxii., p. 420. No. 55.
Northern Diver. Penn. *Arct. Zool.*, ii., p. 518, No. 439, mature; and Imber, No. 440, young.
Colymbus glacialis (*Great Northern Diver*). Wils., ix., p. 84, pl. 74, f. 3.
Plongeon Imbrim (*Colymbus glacialis*). Temm., ii., p. 910.
Colymbus glacialis. Sab. *Frankl. Journ.*, p. 703. Richards. *Append. Parry's Second Voy.*, p. 375, No. 34. Bonap. *Syn.*, p. 420, No. 368.
Eithinnew-Moqua, Cree Indians. Talkyeh, Chipewyans.
Kagloolek, Esquimaux. Inland Loon, Hudson's Bay Residents.

Though this handsome bird is generally described as an inhabitant of the ocean, we seldom observed it either in the Arctic Sea or Hudson's Bay; but it abounds in all the interior lakes, where it destroys vast quantities of fish. It is rarely seen on land, its limbs being ill fitted for walking, though admirably adapted to its aquatic habits. It can swim with great swiftness and to a very considerable distance under the water; and when it comes to the surface, it seldom exposes more than the neck. It takes wing with difficulty, flies heavily, though swiftly, and frequently in a circle round those who intrude on its haunts. Its loud and very melancholy cry, like the howling of a wolf, and at times like the distant scream of a man in distress, is said to portend rain. Its flesh is dark, tough, and unpalatable. We caught several of these birds in the fishing-nets, in which they had entangled themselves in the pursuit of fish.

DESCRIPTION

Of a specimen, killed on Great Bear Lake.

Colour.—Head, neck, and upper tail coverts, glossed with deep purplish-green, on a black ground. A short transverse bar on the throat, a collar on the middle of the neck, interrupted above and below, and the shoulders white, broadly striped on the shafts with black. Whole *upper plumage*, wings, sides of the breast, flanks, and under tail coverts, black, all, except the quills and tail, marked with a pair of white spots near the tip of each feather: the spots form rows, and are large and quadrangular on the scapulars and interscapulars, round and smaller elsewhere, smallest on the rump. *Under plumage* and inner wing coverts white, the axillaries striped down their middles with black. *Bill* and *legs* black. *Irides* brown.

Form.—*Bill* compressed, strong, tapering; its rictus quite straight; its contour very slightly arched above; lower mandible channelled beneath, appearing deepest in the middle; its gonys sloping upwards to the point; margins of both mandibles, but particularly of the lower one, inflected. *Inner wing coverts* very long. *Tail*, of twenty feathers, much rounded.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	36	0	Length from nostrils to tip	2	3	Length of outer nail	0	5
,, of tail	4	0	,, of tarsus	3	8	,, of hind toe	0	9
,, of wing	14	3	,, of middle toe	4	4	,, of hind nail	0	3
,, of bill above	3	1	,, of middle nail	0	7	Extent of wing	48	0
,, of bill to rictus	4	6	,, of outer toe	4	8			

Specimens in mature plumage vary considerably in total length, upwards of an inch in the length of wing, and more than half an inch in the length of the tarsus. —R.

[233.] 2. Colymbus arcticus. (Linn.) *Black-throated Diver.*

Genus, Colymbus, Linn.
The Speckled Diver or Loon. Edw., pl. 146; mature Hudson's Bay specimen.
Black-throated Diver. Penn. *Arct. Zool.*, ii., p. 520, No. 444.
Plongeon lumme, ou à gorge noire (*Colymbus arcticus*). Temm., ii., p. 913.
Colymbus arcticus (*Black-throated Diver*). Richards. *App. Parry's Second Voy.*, p. 376.
Bonap. *Syn.*, p. 420, No. 369.
Moqua, Cree Indians. Loon, Hudson's Bay Residents.

A specimen of this bird, brought from Hudson's Bay by Mr. Isham, is well figured by Edwards; and several specimens were recently brought home by Sir Edward Parry from the coast of Melville Peninsula, which agreed in all respects with others from the north of Europe. The Black-throated Diver is common on the shores of Hudson's Bay, but is rarely seen in the interior. The skins of this and the other species of Diver, being tough and impervious to wet, are used by the Indians and Esquimaux as an article of dress.

DESCRIPTION

Of a specimen killed, June 28, 1822, on Melville Peninsula.

Colour.—Forehead, back, wings, tail, flanks, and thigh feathers, black; the scapulars and shoulders marked with transverse white marks, and the wing coverts with round dots. Hind head and back of the neck ash-coloured; sides of the latter and of the breast white, streaked with black; fore part of the neck black, reflecting purple and green; the under tail coverts barred with black; rest of the under plumage white. *Length*, total, 26 inches; of wing, 11 inches; of bill, $3\frac{1}{2}$ inches. *Weight*, 5 pounds.

The *young* closely resemble those of *C. glacialis*, but may be distinguished by their inferior size, a slight curvature of the upper mandible, and the want of a groove on the under one, which is not thickened in the middle. —R.

[234.] 3. Colymbus septentrionalis. (Linn.) *Red-throated Diver.*

Genus, Colymbus, Linn.
Red-throated Ducker or Loon. Edw., pl. 97. Penn. *Arct. Zool.*, ii., p. 550, No. 443.
Plongeon cat-marin, ou à gorge rouge (*Col. septentrionalis*). Temm., ii., p. 916.
Colymbus septentrionalis (*Red-throated Diver*). Sab. *Frankl. Journ.*, p. 703. Richards. *Append. Parry's Second Voy.*, p. 337, No. 36. Bonap. *Syn.*, p. 421, No. 370.

The Red-throated Diver frequents the shores of Hudson's Bay up to the extremity of Melville Peninsula, and is also abundant on the interior lakes. It lays two eggs, on a little down, by the margin of the water: those brought home by Sir Edward Parry are 35 lines long, 21 wide, and have a pale oil-green colour.

DESCRIPTION

Of a specimen, killed at Hudson's Bay, lat. 57°.

Colour.—Head, chin, and sides of the neck, lead-coloured; centres of the plumage on the top of the head blackish. Front of the neck occupied by a stripe that widens downwards, of rich cochineal or purplish-red. Hind head, back of the neck, shoulders, and sides of the breast, greenish-black, striped on the margins with white. Dorsal plumage and wings pitch-black; narrow space under the wings and under tail coverts also black, with whitish borders. *Under plumage* and inner wing coverts white, the axillaries striped on the shafts with blackish-brown. *Bill* black. *Legs* blackish-green.

Younger individuals have the dorsal plumage interspersed with minute marginal spots, a pair near the tip of each feather.

Form.—*Bill* having the commissure quite straight; but, the upper mandible being considerably depressed at the front, the ascending gonys of the lower one causes the bill, when closed, to appear very slightly recurved; margins of both mandibles greatly incurved. *Tail* of twenty feathers. Hind toe having a smaller lobe, and connected with the inner one by a larger web than in *C. glacialis*. The nails more slender.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total	29	0	Length from nostrils to tip	1	6	Length of outer toe	3	3
,, of tail	3	0	,, of tarsus	3	0	,, of outer nail	0	4¼
,, of wing	11	3	,, of middle toe	3	0	,, of hind toe	0	5½
,, of bill above	2	2	,, of middle nail	0	5	,, of hind nail	0	3
,, of bill to rictus	3	1						

Individuals, apparently in mature plumage, vary considerably in length, some being four inches shorter than the above. —R.

[235.] 1. Uria troile. (Lath.) *Foolish Guillemot.*

Genus, Uria, Brisson.
Foolish guillemot. Edwards, pl. 359, f. 1. Penn., *Arct. Zool.*, ii., p. 516, No. 436.
Lesser guillemot. Idem, *Suppl.*, p. 69. Bonap. *Syn.*, 424, No. 373.
Guillemot à capuchon (*Uria troile*). Temm. ii., p. 921.

This bird, according to the Prince of Musignano, is common on the coasts of the United States in winter. The only American specimens which we have seen, were brought from Hudson's Bay. They do not differ from Spitzbergen ones.

DESCRIPTION

Of a specimen killed at York Factory, Hudson's Bay.

Colour.—Head and front of the neck rich pitch-black. Dorsal plumage and wings greyish-black. Tips of the secondaries and under plumage white; that colour forming a rounded projection into the black of the neck. *Bill* and *legs* black. Margins of the eyelids and a suture from behind the eye white. In another specimen from the same locality, the eyelids and suture are black, as in *U. Brunnichii*.

Form.—*Bill* longer than the head, considerably compressed; commissure nearly straight; mandible acutely notched at the tip.

In *winter* the under parts of the head and throat are white, and the black of the dorsal plumage loses its brownish tinge.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	18	0	Length of bill . .	1	10	Length of tarsus . .	1	3
,, of tail . .	2	0	,, of bill to rictus .	2	11	,, of middle toe .	1	8
,, of wing .	7	7	,, of gonys . .	1	3	,, of middle nail .	0	5

—R.

[236.] 2. Uria Brunnichii. (Sabine.) *Brunnich's Guillemot.*

Genus, Uria, Brisson.
" Uria troile. Brunn., No. 109."
Uria Brunnichii. Sab. *Greenl. Birds*, p. 538, No. 14; *Suppl. Parry's First Voy.*, p. ccix., No. 30. Richards. *App. Parry's Second Voy.*, p. 377, No. 37.
Guillemot à gros bec (*Uria Brunnichii*). Temm., ii., p. 924. Bonap. *Syn.*, p. 424, No. 374.

Brunnich's Guillemot frequents the most remote Arctic American seas that have been visited, Greenland, and Hudson's Bay, and, according to the Prince of Musignano, it retires to the United States in winter.

DESCRIPTION

Of a *male*, killed on Tern Island, Melville Peninsula, in August.

Colour.—Top of the head and *upper plumage* reddish-black. Head, beneath the level

of the eye, and the front of the neck, pitch-black. Tips of the secondaries and the *under plumage* white; the white indenting the black of the base of the neck in an acute angular form. *Bill* bluish-black, paler at the base. Rictus bright yellow.

Form.—*Bill* wider at the base, shorter, and less compressed than in *U. troile*. Under mandible higher, with a much shorter and more prominent gonys; commissure more curved. A suture on the plumage behind the eye, as in *U. troile*.

There is no difference of plumage in the *sexes*. On the approach of *winter a change of colour* takes place similar to that which *Uria grylle* undergoes, and continues until the following June. Specimens killed in the beginning of that month, on Melville Island, have the throat and neck white, but early in July, the summer plumage above described is complete. Some individuals change later than others, a few having still a sprinkling of white on the throat in August. In the *young* the bill is more slender, and though shorter bears more resemblance to that of *U. troile*. The *bills* of the American specimens, which we have seen, are straighter and less stout than those of Spitzbergen birds, probably owing to their inferior age.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	18	0	Length of bill above .	1	2	Length of tarsus . .	1	4
,, of tail . .	2	9	,, of bill to rictus .	2	0	,, of middle toe . .	1	7
,, of wing .	8	3	,, of its gonys .	0	$10\frac{1}{2}$	,, of its nail . .	0	5

—R.

[237.] 3. Uria grylle. (Lath.) *Black Guillemot.*

Genus, Uria, Brisson.
Black Greenland Dove. Edwards, pl. 50, small figure.
Spotted Greenland Dove. Idem, front figure.
Black Guillemot. Penn. *Arct. Zool.*, ii., p. 516, No. 437.
Guillemot à miroir blanc (*Uria grylle*). Temm., ii., p. 925.
Uria grylle (*Black Guillemot*). Sab. *Greenl. Birds*, p. 540, No. 15; *Suppl. Parry's First Voy.*, p. ccix., No. 31. Richards. *Append. Parry's Second Voy.*, p. 377, No. 38. Bonap. *Syn.*, No. 371.
Sesekèsewuck. Cree Indians.

This, like the other Guillemots, is entirely a sea bird, never going inland, and seldom on shore for any other purpose than incubation, which is performed in holes of the rocks, from whence it can easily throw itself into the water. It abounds in the Arctic seas and straits, from Melville Island down to Hudson's Bay, and remains, though in diminished numbers, all the winter in the pools of open water, which occur, even in high latitudes, among the floes of ice. Small flocks extend their migrations, in that season, as far south as the United States.

DESCRIPTION

Of a *male*, killed, July 22, 1822, off Tern Island.

Colour.—Greenish-black *above*, reddish-black *beneath*; border of the wing and quills

pitch-black. Middle and greater coverts, inner bases of the quill-feathers, and all the under wing coverts, white. *Bill* black; inside of the mouth and the feet bright scarlet.

Form.—*Bill* compressed; its culmen rounded; extreme tip of the upper mandible slightly drooping, not notched; that of the lower mandible excavated or sloping; commissure straight. *Nostrils* short, narrow, basal slits near the commissure. Outer and middle toes of equal length; inner one considerably shorter. No hind toe.

Winter plumage.—Head, neck, whole *under plumage*, scapulars, rump, mirror of the wings, and tips of the dorsal plumage, white. A crescentic patch before the eye, the border of the wing, the primary coverts, all the quills, the tail, and tips of the scapulars, black. When the dorsal plumage is ruffled, the black bases of the plumage appear. Some birds killed in March showed a few black edgings on the belly. In the spring and beginning of the summer the plumage is variously mottled, the summer dress being complete at different periods in different individuals, but rarely before the beginning of July. A *female* killed on the 28th of that month had still a number of white feathers scattered over the back and belly.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	13	0	Length of bill above . .	1	1½	Length of middle nail .	0	4
,, to tip of the nails	15	6	,, of bill to rictus .	1	8	,, of inner toe .	0	11
,, of tail . .	2	0	,, of tarsus . .	1	2	,, of its nail . .	0	3¼
,, of wing . .	6	4	,, of middle toe .	1	3¼			

—R.

[238.] 4. Uria alle. (Temm.) *Little Guillemot.*

Genus, Uria, Brisson.
Small black and white Diver. Edwards, pl. 91.
Little Auk (*Alca alle*). Penn. *Arct. Zool.*, ii., p. 512, No. 429. Wils., ix., p. 94, pl. 74, f. 5.
Alca alle (*Little Auk*). Sab. *Greenl. Birds*, p. 537, No. 13.
Guillemot nain (*Uria alle*). Temm., ii., p. 926.
Uria alle (*Little Auk*). Sab. *Suppl. Parry's First Voy.*, p. ccx., No. 32.
Uria (Mergulus) alle. Bonap. *Syn.*, No. 375.

This neat little Guillemot, termed by the seamen "Greenland Dove," is an inhabitant of the Arctic Seas in summer, and migrates in winter to the coasts of the United States.

DESCRIPTION

Of a specimen killed in August, near Melville Island, lat. 75°.

Colour.—Top of the head, dorsal plumage, tail, wings, and the sides under them, velvet-black. Under surface of the head, throat, upper part of the breast, and thighs, pitch-black; rest of the *under plumage*, the tips of the secondaries, and lateral edges of the scapulars, white; that colour joining the black of the breast in an even line. *Bill* black. *Legs* brownish. In *winter* the front of the neck is whitish, the change taking place towards the end of September.

Form.—*Bill* short, convex, conical, both mandibles notched at the tip; the upper one grooved. Commissure curved towards the tip. *Nostrils* basal, semicircular. *Wings* shorter than the tail; first and second quills sub-equal. Outer and middle toes equal in length.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . .	9	6	Length of bill above .	0	6	Length of middle and outer toes . . .	0	11
,, of tail . .	1	9	,, of bill to rictus .	0	11			
,, of wing .	5	0	,, of tarsus . .	0	9	,, of nails . .	0	3

—R.

APPENDIX, No. I.

CHARACTERS OF GENERA AND SUB-GENERA HITHERTO UNDEFINED*.

By WILLIAM SWAINSON, Esq.

Family, LANIADÆ.

Sub-family, LANIANÆ, Nob.

Rostrum *breve, compressum.* Digiti *laterales æquales:* ungues *graciles, acuti.*

Bill short, compressed. Lateral *toes* equal: *claws* slender, acute.

1. Genus, TELOPHORUS.

Rostrum *sub-elongatum, sed capite brevius;* culmine *gradatim arcuato;* vibrissæ *mastacales paucæ, debiles.* Pedes *validi;* tarsi *elevati;* digiti laterales *æquales;* ungues *graciles, acutissimi.* Alæ *rotundatæ.* Cauda *gradata.* Colores *vividi.*

Bill somewhat lengthened, but shorter than the head; *culmen* gradually arched; *rictus* furnished with a few weak bristles. *Feet* strong; *tarsi* elevated; outer and inner *toes* equal; *claws* slender and very acute. *Wings* rounded. *Tail* graduated. *Colours* bright.

Type.—*Telophorus collaris*, Swains. La Backbakiri, Le Vaill. *Ois. de l'Afr.*, ii., pl. 67.

2. Sub-genus (?), LANIELLUS.

Rostrum *breve, debiliusculum;* maxilla *pone apicem emarginata nec dentata;* mandibula inferior *integerrima;* vibrissæ *mastacales validæ;* nares *magnæ, nudæ, membraná semiclausæ, foramine laterali, ovali.* Pedes *validi;* tarsi *elongati, caligati* (i. e. *scutulis indistinctis involuti*); digiti laterales *æquales;* ungues *minusculi.* Alæ *rotundatæ, brevissimæ.* Cauda *elongata, cuneata, rectricibus angustissimis.* Colores *obscuri.*

Bill short, rather weak; *tooth* of the upper mandible very small, and reduced to a notch; *under mandible* entire; *rictus* strongly bristled; *nostrils* large, covered by a membrane, the aperture lateral, oblong. *Feet* strong; *tarsi* elevated, the *scales* entire; outer and inner *toes* equal; *claws* rather small. *Wings* rounded, very short. *Tail* lengthened, cuneated; the feathers very narrow. *Colours* dull.

Type.—*Lanius leucogrammicus*, Reinwardt.

Obs.—I suspect this may prove to be the rasorial type of the restricted genus *Lanius;* the nostrils, in fact, are quite those of a rasorial bird.

* The characters of other genera or sub-genera, which we have defined in zoological periodicals, will be found collected in the ornithological portion of the "Encyclopædia of Zoology," now almost ready for the press.

Sub-family, THAMNOPHILINÆ, Nob.

Rostrum *elongatum, compressum, aduncum.* Digiti *laterales inæquales, internus brevior;* ungues *lati, obtusiusculi.*

Bill lengthened, compressed, abruptly hooked. Lateral *toes* unequal, the inner shortest; *claws* broad and somewhat obtuse.

3. Genus, PLATYLOPHUS.

Rostrum *robustum, ad basin* vibrissis *longissimis rigidis, et plumis capistri antrorsum producti rigidis recumbentibus tectum.* Vertex *cristatus.* Pedes *validi;* digitus medius *abbreviatus, halluce paulo brevior;* digiti *laterales sub-æquales, externus ad basin distinctus;* ungues *validi, acuti.* Alæ *et* rectrices *rotundatæ, hæ setâ brevi desinentes.*

Bill robust, the base defended by very long stiff bristles; frontal feathers rigid and advancing. *Crown* crested. *Feet* strong; *middle toe* abbreviated, rather shorter than the hind toe; lateral toes nearly equal; first joint of the outer toe free. *Claws* strong and acute. *Wings* and *tail feathers* rounded, the latter terminating in setiform points.

Type.—*Garrulus galericulatus*, VIEILL. (Vanga, CUV.)

Sub-family, EDOLIANÆ, Nob.

Rostrum *basi dilatatum; lateribus compressis; culmine gradatim arcuato.* Vibrissæ *mastacales validæ.* Alæ *largæ.* Pedes *breves, debiles;* hallux *tarsum ferè æquans.*

Bill considerably widened at the base, the sides compressed; culmen gradually arched. *Rictus* strongly bristled. *Wings* ample. *Feet* short, weak; *hinder toe* nearly as long as the tarsus.

Genera.—*Edolius*, CUV. *Vanga*, (?) CUV. *Ocypterus*, CUV.

4. Genus, TEPHRODORNIS.

Rostrum *validum, abruptè aduncum; plumæ capistri rigidæ recumbentes et nares abscondentes.* Pedes *debiles, graciles;* tarsus *halluce longior;* digiti laterales *inæquales;* ungues *parvi.* Alæ *mediocres latæ, obliquè rotundatæ.* Cauda *mediocris, æqualis vel lævissimè bifurca.*

Bill strong, abruptly hooked; frontal feathers rigid, recurved over, and concealing the nostrils. *Feet* weak, slender; *tarsus* longer than the hind toe; *lateral toes* unequal; *claws* small. *Wings* moderate, broad, obliquely rounded. *Tail* moderate, even, or very slightly forked.

Type.—*Lanius virgatus*, TEMM. *Pl. Col.*, 256.

5. Genus (?), ANALCIPUS.

Rostrum *elongato-conicum, culmine gradatim arcuato.* Rictus *lævis.* Nares *nudæ, basales, foramine rotundato.* Alæ *elongatæ caudam ferè æquantes;* remige *primâ spuriâ;*

Bill lengthened, conic; culmen gradually arched. *Rictus* smooth. *Nostrils* naked, basal, the aperture round. *Wings* lengthened, nearly as long as the tail; the first quill spu-

secundâ multò breviori tertiâ, quartâ, et quintâ quæ æquales, longissimæ. Cauda *brevis æqualis.* Pedes *breves, debiles;* digiti laterales *inæquales;* hallux *tarso brevior;* ungues *acuti.*

rious, the second much shorter than the third, fourth, or fifth, which are equal and longest. *Tail* short, even. *Feet* short, weak; *lateral toes* unequal; *hinder toe* shorter than the tarsus; *claws* acute.

Types.—*Ocypterus sanguinolentus*, Temm. *Lanius bicolor*, Auct.

Sub-family, CEBLEPYRINÆ, Nob.

Rostrum *breve, ferè totum dilatatum, lateribus vix compressis.* Rictus *sæpius lævis.* Nares *plumis densis, brevibus tectæ.* Tarsi *breves validi.* Plumæ dorsi *rigidæ.*

Bill short, considerably widened nearly its entire length, the sides scarcely compressed. *Rictus* in general smooth. *Nostrils* concealed by short dense feathers. *Tarsi* short, strong. *Feathers of the back* rigid.

Genera.—*Ceblepyris*, Cuv. *Phœnicornis*, Swains. (*Zool. Ill., N.S.*, pl. 57.) *Oxynotus*, Swains.

6. Sub-genus (?), ERUCIVORA.

Rostrum *longiusculum, medio compressum.* Rictus *lævis.* Alæ *mediocres, remigibus quartis et quintis longissimis.* Cauda *mediocris, gradata.* Plumæ dorsi *non rigidæ.* Tarsi *graciles, longiusculi; digitus externus et internus sub-æquales.*

Bill rather lengthened, compressed in the middle. *Rictus* smooth. *Wings* moderate; the fourth and fifth quills longest. *Tail* moderate, graduated. *Feathers of the back* not rigid. *Tarsus* slender, somewhat lengthened; the outer and inner toe nearly equal.

Type.—*Turdus orientalis*, Auct. (*Saxicola orientalis*, Cuv. *Mus. Paris.*)

Obs.—I have many doubts both as to the value of this group, and its precise situation among the *Ceblepyrinæ*. It is distinguished from all others I have yet seen, by its more lengthened and compressed bill; by the greater elevation of its tarsi, and by the softness or flexibility of its rump feathers. Judging theoretically, as these characters are the most aberrant I have yet seen, they might be supposed to indicate that genus which represented the tenuirostral type, particularly as the following is manifestly the representation of *Prionops*, Vieill., *Dasycephala*, Swains., &c.

7. Genus, OXYNOTUS.

Rostrum *validum, basi latum; culmine elevato, arcuato; apice non parum aduncâ. Mandibulæ utræque emarginatæ.* Plumæ capistri *recumbentes, divergentes.* Vibrissæ mastacales *rigidæ.* Plumæ capitis *setis crebris interstinctæ.* Alæ *et* cauda *rotundatæ.* Plumæ dorsi *rigidissimæ.* Tarsi *validi;* ungues *magni valdè curvati.*

Bill strong, the base broad; the culmen elevated and arched, the tip considerably hooked; both mandibles notched; defended in front by rigid diverging feathers; *rictus* armed with stiff bristles. *Feathers of the head* thickly intermixed with setaceous hairs. *Wings* and *tail* rounded. *Feathers on the back* very rigid. *Tarsi* strong; the *claws* large, and much curved.

Type.—*Lanius rufiventer*, Mus. Paris.

Obs.—There is a general resemblance between this very singular bird and the genus *Sphecotheres*, Vieill., in the bill and tarsi; but the two forms are clearly analogical. We originally proposed the name of *Acanthinotus* for this genus, but the word has been already employed in Entomology.

Sub-family, TYRANNINÆ, Nob.

Rostrum *breve, totum depressum, nec culmine arcuato, sed apice aduncâ.* Nares *et* Ricti *setis obtecti.* Pedes *breves, graciles;* digiti laterales *æquales vel sub-æquales;* ungues *longi, graciles, acutissimi.*

Bill short, depressed its whole length, the culmen not arched, the tip abruptly hooked. *Nostrils* and *rictus* defended by bristles. *Feet* short, slender; *lateral toes* equal, or very nearly so; *claws* long, slender, very acute.

Genera.—*Ptiliogonys*, Swains. (*Zool. Illust., N. S.*, 62). *Tyrannula*, Swains. *Tyrannus*, Cuv. *Saurophagus*, Swains. *Milvulus*, Swains.

8. Genus, SAUROPHAGUS.

Rostrum *rectum, caput æquans; lateribus compressis, apice aduncâ.* Alæ *rotundatæ, remige primâ et secundâ sub-gradatis, integerrimis.* Cauda *mediocris rotundata.* Pedes *validiusculi;* digiti laterales *æquales;* ungues *acuti, parum curvati.*

Bill straight, as long as the head, compressed on the sides, abruptly hooked at its tip. *Wings* rounded; the first and second quills slightly graduated, immarginate. *Tail* moderate, rounded. *Feet* rather strong; *lateral toes* equal; *claws* acute, slightly curved.

Type.—*Lanius sulphuratus*, Auct.

9. Genus, TYRANNUS, Brisson.

Rostrum *depressum.* Alæ *elongatæ; remiges primariæ abruptè sinuatæ aut apice emarginatæ; remiges tertiæ et quartæ longissimæ, primas et secundas paulò superantes.* Cauda *lata, æqualis vel sub-emarginata.* Ungues *magni, acuti, valdè curvati.*

Bill depressed. *Wings* lengthened; the primary quills abruptly sinuated or emarginate at their tips; the first and second quills rather shorter than the third and fourth, which are the longest. *Tail* broad, even, or slightly forked. *Claws* large, acute, much curved.

Typical.—*T. intrepidus*, Vieill., *crudelis*, Sw., *crassirostris*, Sw., *griseus*, Vieill., *leucotis*, Sw., *borealis*, Sw.
Aberrant.—*T. audax*, Sw., *crinitus*, Sw., *magnirostris*, Sw. (*Lanius pitangua*, Linn.) *See Sw. Monograph.*

10. Genus, TYRANNULA.

Statura *parva.* Rostrum *depressum.* Alæ *mediocres;* remiges *primæ et secundæ sequentibus paulò breviores, apicibus nec sinuatis nec emarginatis.* Cauda *lata, æqualis.* Ungues *magni, acuti, valdè curvati;* posticus *validissimus.* Scutulæ anticæ *tarsum involventes ut posticè contiguæ fiunt.*

Size small. *Bill* depressed. *Wings* moderate; the first and second *quills* rather shorter than the following, the tips neither sinuated nor emarginate. *Tail* broad, even. *Claws* large, acute, much curved; *hinder claw* very strong. *Anterior scales* enveloping the tarsus, and meeting behind.

Types.—*Muscicapa nunciola, rapax, querula*, Wilson, *&c.*

Family, MERULIDÆ.

Sub-family, BRACHYPODINÆ, Nob.

11. Genus, BRACHYPUS.

Rostrum *capite brevius, basi latum, lateribus compressis; culmine elevato, et e basi arcuato.* Rictus *sæpius vibrissis longis armatus.* Pedes *brevissimi, validi.* Tarsi *caligati.* Ungues *valdè curvati, acuti.* Alæ caudaque *rotundatæ.* Hab. *orb. antiq.*

Bill shorter than the head; the base broad, sides compressed, culmen elevated, and curved from the base. *Rictus* generally furnished with long bristles. *Feet* very short, strong; scales of the tarsus entire. *Claws* much curved, acute. Wings and tail rounded. *Inhabits* the old world.

Synopsis Sub-generorum.

Synopsis of the Sub-genera.

Rostrum *breve; vibrissæ mastacales validæ.* Pedes *parvi, debiles: digiti laterales æquales.* Hallux *tarsum æquans.* — BRACHYPUS, Swains. — *Bill* short; rictus bristled. *Feet* small, weak: lateral toes equal. *Hinder toe* as long as the tarsus.

Type.—*Brachypus dispar*, Sw. (*Turdus dispar*, Horsf.)

Rostrum *longiusculum, apice aduncâ; emarginatione in denticulo abeunte.* Rictus *lævis.* Pedes *parvi: digiti laterales inæquales.* Hallux *tarso paulo brevius.* — CHLOROPSIS, J. & S. — *Bill* more lengthened; the tip much hooked; the notch forming a small distinct tooth. *Rictus* smooth. *Feet* small; lateral toes unequal; the *hinder toe* rather shorter than the tarsus.

See Jardine & Selby's *Illustrations of Ornithology*, vol. ii.

Rostrum *caput longitudine ferè æquans, elongato-conicum.* Rictus *lævis.* Tarsi *longiusculi;* scutulæ *anticæ divisæ.* Cauda *æqualis.* — IÖRA, Horsf. — *Bill* nearly as long as the head; lengthened conic. *Rictus* smooth. *Tarsi* somewhat lengthened; the anterior scales divided. *Tail* even.

Type.—*Iöra scapularis*, Horsf. *Linn. Trans.*, xiii, p. 151.

Rostrum *breve; mandibulâ superiori apicem versus serratâ. Setæ collo impositæ.* — ANDROPADUS*, Swains. — *Bill* short; the upper mandible serrated near the tip. Neck with setaceous hairs.

Type.—*L'importan*, Le Vaill., iii., p. 41, pl. 106, f. 2.

Rostrum *breve: vibrissæ mastacales.* Digiti laterales *inæquales.* Hallux *tarso brevior.* — HÆMATORNIS, Swains. — *Bill* short; rictus bristled. *Lateral toes* unequal. *Hinder toe* shorter than the tarsus.

Types.—1. *Chrysorrhoëus*, Le Vaill. iii. 46. 2. *Turdus hæmorrhous*, Auct. 3. *T. bimaculatus*, Horsf. 4. *Erythrotis*, Sw. (*L. jocosus*, Linn.) &c.

* Th. *ανηρ vir, et οπαδος comes, adsectator.*

12. Genus, MICROPUS.

Rostrum *caput longitudine æquans, rectum, sub-conicum;* gonys *ascendens.* Rictus *et* nares *vibrissis debilibus, divergentibus circumcincti.* Tarsi *brevissimi, caligati.* Digiti *laterales inæquales.* Hallux *tarsum æquans.* Alæ *mediocres.* Cauda *æqualis.*

Bill as long as the head, straight, somewhat conic, the *gonys* ascending. *Rictus* and *nostrils* surrounded with weak diverging bristles. *Tarsi* very short; the scales undivided; lateral toes unequal; *hinder toe* as long as the tarsus. *Wings* moderate, rounded; *tail* even.

Type.—*T. chalcocephalus*, Temm., pl. col. 483. *Turdus bicolor*, Gray; and three other species. India.

13. Genus, PHYLLASTREPHUS.

Rostrum *caput longitudine æquans, validum, apice arcuatá.* Vibrissæ *mastacales validæ.* Plumæ capistri *parvæ, densæ, recumbentes.* Alæ caudaque *mediocres, rotundatæ.* Pedes *breves, validi, robusti;* scutulæ *tarsi anticæ distinctæ.* Digiti laterales *inæquales.* Hallux *tarso brevior, digitum medium æquans.* Ungues *magni, lati, uncinati, acuti.*

Bill as long as the head, strong, the tip rather hooked; *rictus* strongly bristled; *frontal feathers* small, compact, directed forward. *Wings* and *tail* moderate, rounded. *Feet* short, strong, robust. *Anterior tarsal scales* divided. *Lateral toes* unequal. *Hinder toe* shorter than the tarsus, but as long as the middle toe. *Claws* large, broad, hooked, acute.

Type.—*Le Jaboteur*, Le Vaill., pl. 112, f. 1. Five species, all from Africa.

Sub-family, MYOTHERINÆ.

14. Genus, DASYCEPHALA.

Rostrum *caput longitudine æquans, basi latum, medio cylindricum, apice aduncum;* gonyde *ascendente.* Nares *et* capistrum *plumis rigidis setisque tectæ.* Vibrissæ *mastacales validæ.* Tarsi *elongati, graciles: squamis lateralibus pluribus, parvis, ovalibus.* Digiti *et* ungues *graciles.* Digitus internus *brevis;* externus *medio connexus.* Unguis posticus *permagnus.* Alæ caudaque *rotundatæ.*

Bill as long as the head, straight, the tip abruptly hooked, the base wide; cylindrical beyond. *Gonys* ascending. *Nostrils* and *front* of the *head* defended by rigid feathers and bristles. *Rictus* strongly bristled. *Tarsi* lengthened, slender; lateral scales numerous, small, oval. *Toes* and *claws* slender; inner toe short; outer toe connected to the middle; hind claw very large. *Wings* and *tail* rounded.

Types.—*Ty. rufescens*, Sw. *Rufiventer*, Vieill., &c. Five species from Brazil; one Africa.

Sub-family, MERULINÆ.

15. Genus, CHAËTOPS.

Rostrum *mediocre, rostri merulæ instar, emarginatum;* nares *basales, magnæ, nudæ,*

Bill moderate, thrush-like, notched; *nostrils* basal, large, naked, membranaceous; the aper-

membranceæ, foramine laterali, lineari. Plumæ capistri *rigidæ, rhachidibus setaceis; quibus* plumæ *menti simillimæ sed debiliores.* Vibrissæ *mastacales.* Alæ *brevissimæ, rotundatæ.* Cauda *longiuscula, lata, convexa, mollis, rectricibus intermediis æqualibus; paribus duobus lateralibus gradatis.* Tarsi *longissimi, validi; scutulæ anticæ distinctæ;* digiti laterales *inæquales;* ungues *parvi, obtusi, parum curvati; tres anteriores æquales.*

ture lateral, linear. *Frontal feathers* rigid, the shafts composed of bristles; chin feathers the same, but weaker. *Rictus* bristled. *Wings* very short, rounded. *Tail* rather lengthened, broad, convex, soft, the middle feathers even, the two lateral pairs graduated. *Tarsi* very long, strong; anterior scales divided; *lateral toes* unequal. *Claws* small, obtuse, and slightly curved; the three anterior of equal size.

Typus.—Ch. Burchelli, *supra fuligneus, striis griseis, subtus uropygioque rufescens, remigibus spuriis et fasciâ terminali rectricum exticarum albis.*

Type.—*Ch. Burchelli*, above blackish-brown striped with grey; rump and under plumage rufous. Spurious quills and terminal band on the lateral tail feathers white.

Obs.—I have given the full characters of this and the next genus on account of their extreme rarity. Chaëtops was discovered by Mr. Burchell in southern Africa.

Sub-family, CRATEROPODINÆ.

16. Genus, PELLORNEUM*.

Rostrum *mediocre, rectum, subconicum,* apice *emarginatum.* Gonys *ascendens.* Plumæ capistri *parvæ, rigidæ, recumbentes.* Vibrissæ *mastacales.* Alæ *brevissimæ, valde rotundatæ.* Cauda *mediocris, gradata.* Tarsus *digitusque medius æquales:* digiti laterales *multò breviores, æquales.* Ungues *antici minimi, parum curvati.* Hallux *digito medio brevior.* Scutulæ *anticæ vix distinctæ.*

Bill moderate, straight, somewhat conic; the tip notched. *Gonys* ascending. *Frontal feathers* small, rigid, directed forward. *Rictus* bristled. *Wings* very short, much rounded. *Tail* moderate, graduated. *Tarsus* and *middle toe* of equal length; *lateral toes* much shorter, equal. Anterior *claws* very small, and but slightly curved. *Hinder toe* shorter than the middle. *Anterior scales* scarcely divided.

Typus.—Pellorneum ruficeps, *supra brunneum; subtus fulvescenti-album, striis brunneis, mento albo immaculato, fronte verticeque rufis. Hab. in India.* Mus. Nost.

Type.—*Pellorneum ruficeps*, above brown, beneath fulvous white, striped with brown; chin white immaculate; front and crown rufous. Inhabits India. Mus. Nost.

Obs.—This genus represents, or rather passes into *Phyllastrephus;* thus connecting the *Crateropodinæ* and the *Brachypodinæ.* From the former it is distinguished by its more slender thrush-like feet, its small slightly curved claws, &c. The general appearance of the only species I have yet seen, and which is from India, is that of a small thrush, but resembling a *Timalia.* By the two last genera, the true passage is marked from the genus *Orpheus* to that of *Crateropus.* A belief that this form existed, although it was then entirely unknown to me, gave rise to the opinion expressed at p. 153, that the genus *Icteria* was not the type which united the *Brachypodinæ* to the *Crateropodinæ.*

17. Genus, CRATEROPUS.

Rostrum *caput æquans, valde compressum,* *Bill* as long as the head, much compressed;

* *Th.* πίλλος *fuscus*, *et* ορνις *avis.*

obsoletè emarginatum. Vibrissæ *mastacales breves*. Plumæ capistri *rigidæ*. Alæ breves, *rotundatæ*. Cauda *magna, lata, mollis, rotundata*. Pedes *magni, validissimi*. Tarsi *elongati*. Digiti laterales *ferè æquales*. Hallux *magnus digitum medium longitudine ferè æquans*. Plumæ *laxæ, molles*.

obsoletely notched. *Rictus* bristled. *Frontal feathers* rigid. *Wings* short, rounded. *Tail* large, broad, soft, rounded. *Feet* large; very strong. *Tarsi* lengthened. *Lateral toes* nearly equal; *hind toe* large, nearly as long as the middle toe. *Plumage* lax, soft.

Type.—*Crateropus Reinwardtii*. Sw. *Zool. Ill., N.S.*, pl. 30.

Obs.—The sub-genera appear to be *Pomatorrhinus, Grallina, Cinclosoma*, and the following one, which latter is clearly the type of *Cinclus*. The characters of the three former are greatly in want of revision.

18. Sub-genus, AIPUNEMIA*.

Rostrum *rostro Cincli simile, integerrimum. rectum, basi altum;* gonys *ascendens*. Nares *magnæ, nudæ, corneæ, foramine parvo, lineari, laterali*. Alæ *caudaque brevissimæ, rotundatæ*. Tarsi *longissimi, graciles;* squamæ anticæ *et* laterales *distinctæ; digitus internus brevis*. Ungues *parvi, graciles, non multum curvati*.

Hab. in India. Spec. 3, indescriptæ.

Bill, resembling that of *Cinclus*, entire, very straight; the base high; *gonys* ascending; *nostrils* large, naked, corneous, aperture small, linear, lateral. *Wings* and *tail* very short, rounded. *Legs* very long, slender; the anterior and lateral *scales* divided; inner toe short. *Claws* small, slender, not much curved.

Inhabits India. Three species, not described. One of these is in the British Museum, the others are at Paris.

Family, SYLVIADÆ.

19. Genus, ERYTHACA.

Rostrum *basi depressum, lateribus valde compressis;* gonys *subascendens*. Vibrissæ *mastacales, longæ, debiles, divergentes*. Tarsi *elongati, graciles caligati* (i.e. *squamis indistinctis*); *digiti laterales, æquales*. Cauda *divaricata, rectricibus mucronatis*.

Bill depressed at the base; sides much compressed; *gonys* slightly ascending. *Rictus* with long, weak, diverging bristles. *Tarsi* lengthened, slender, the scales undivided; lateral toes equal. *Tail* divaricated, the tips of the feathers pointed.

Type.—*Sylvia rubecula*, Auct.

Obs.—I am not, at present, prepared to offer any opinion on the extent of this genus, which seems to be the Fissirostral group of the *Saxicolinæ*. *Sialia* and *Petroïca* are probably two of the sub-genera, the first distinguished by the structure of the wing, the other by that of the foot. *Sylvia rubecola* may possibly constitute the passage to the genus *Saxicola*.

* Th. αιπυς *altus, et* κνημη *tibia*.

20. Genus, PHŒNICURA.

Rostrum *obsoletè emarginatum, gracillimum, rectum, lateribus compressis, mediis in naribus abruptè gibbum.* Rictus *brevis.* Alæ *mediocres,* remex *prima spuria,* 3, 4, *et* 5 *æquales longissimæque.* Pedes *graciles.* Tarsi *caligati; digitus internus externo paulo brevior.* Cauda *æqualis, rectricibus obtusis sæpius rufis.*

Bill obsoletely notched, very slender, straight, the sides compressed; culmen suddenly gibbous between the nostrils. *Rictus* smooth. *Wings* moderate, the first quill spurious, the 3d, 4th, and 5th equal and longest. *Legs* slender. *Tarsus* with entire scales. Inner toe rather shorter than the outer. *Tail* even; the feathers obtuse and generally rufous.

Type.—*P. muraria,* Sw. (*Motacilla phœnicura,* AUCT.)

21. Sub-genus, THAMNOBIA. (Generis Phœnicuræ?)

Rostrum *integerrimum, lateribus compressis, inflexis;* culmen *e basi arcuatum, sed ad nares non gibbum.* Rictus *angulatus.* Alæ *breves, rotundatæ;* remiges *primariæ vix secundarias superantes, remex quarta, quinta, et sexta æquales, longissimæque.* Tarsi *squamis distinctis.* Cauda *rotundata, rectricibus obtusissimis, sæpiusque nigris.*

Bill entire, the sides compressed and inflexed, culmen curved from the base, but not gibbous at the nostrils. *Rictus* angulated. *Wings* short, much rounded, the greater quills scarcely longer than the lesser; the 4th, 5th, and 6th equal and longest. *Tarsi* with divided scales. *Tail* rounded; the feathers very obtuse, and generally black.

Type.—*Th. rufiventer,* Sw. (*Le traquet à queue striée,* LE VAILL., pl. 188). Six species, Africa and India.

OBS.—I cannot state, from analysis, whether Le Vaillant is correct in placing this form with the *Saxicolinæ,* or whether it is not a subgenus of *Phœnicura.* There are reasons, however, which lead me to adopt the latter supposition. The type clearly corresponds to *Linaria, Brachypus, Parisoma,* &c. &c.

22. Sub-genus, DUMECOLA. (Generis Sylvicolæ.)

Rostrum *basi latum, lateribus compressis, apice aduncum et emarginatum,* vibrissis *divergentibus basi cinctum.* Alæ *mediocres;* remex *prima, secunda, et tertia leviter gradatæ.* Cauda *divaricata, rectricibus acumine tenui desinentibus.* Ungues *validi valdè curvati;* unguis *posticus magnus medium longitudine æquans.* Digiti *laterales inequales.*

Bill wide at the base, the sides compressed, the tip abruptly hooked and notched, the base surrounded with diverging bristles. *Wings* moderate, the first, second, and third quills slightly graduated. *Tail* divaricated, ending in fine points. *Hinder toe* and claw large, as long as the middle; lateral *toes* unequal. *Claws* strong, much hooked.

Typus.—D. RUFICAUDA, *supra olivacea, subtus fulva; capite, cervice guloque in mare cinereis; caudâ et tegminibus ejus superioribus fulvo tinctis.*

Type.—*D. ruficauda,* above olive, beneath fulvous; head, neck, and throat, in the male, cinereous; tail and upper covers tinged with fulvous.

OBS.—Having seen but one species of this form, I venture to characterize it with much doubt, since I suspect that the true fissirostral type of *Sylvicola* is the *Muscicapa Dyops* of Temminck, Pl. col. 144, f. 1. *Dumecola ruficauda* closely resembles a very small *Tyrannula,* except in its feet, which agree with this genus in being long,—the tarsus measuring, from the knee to the sole, nine-tenths of an inch. I have recently received from Mexico a bird, which seems more intermediate between *Zosterops* and *Sylvicola,* than either *Dumecola* or the *Sylvia mitrata* of Wilson. This latter, from its close resemblance, in a young state, to *Mniotilta pinus,* might lead us to suspect it entered in the same circle. When such minute analysis is gone into, we feel it necessary to express all our doubts; nor can these be dispelled until the genus *Setophaga* has been carefully studied, and its different forms defined.

23. Sub-genus, PARISOMA. (Generis Pari.)

Rostrum *breve, basi latum, lateribus valdè compressis, culmine è basi arcuato, apice emarginatâ.* Nares *magnæ, ferè nudæ.* Vibrissæ *mastacales.* Alæ *breves, rotundatæ.* Cauda *gradata.* Tarsi *elongati.* Digiti *laterales æquales;* hallux *validus, digito medio brevior.*

Bill short, the base wide, the sides much compressed, culmen arched from the base, the tip notched. *Nostrils* large, nearly naked. *Rictus* bristled. *Wings* short, rounded. *Tail* graduated. *Tarsi* lengthened. Lateral *toes* equal; *hinder toe* strong, shorter than the middle toe.

Type.—*Le Grignet*, Le Vaill., *Ois. d'Afr.*, iii., pl. 126, f. 1.

24. Genus, LESSONIA.

Rostrum *breve, depressum, triangulare, apice aduncâ, culmine recto.* Vibrissæ *mastacales.* Alæ *longæ, acuminatæ, remigibus quatuor prioribus æqualibus.* Cauda *æqualis.* Tarsi *longissimi, graciles.* Digiti *laterales æquales.* Ungues *vix curvati, posticus longissimus.*

Bill short, depressed, triangular, the tip abruptly hooked, culmen straight. *Rictus* bristled. *Wings* long, pointed; the first four quills of nearly equal length. *Tail* even. *Tarsi* very long, slender. The lateral *toes* equal. *Claws* very slightly curved; hind claw very long.

Type.—*Anthus sordidus*, Lesson. Chili. *Mus. Nost.*

Obs.—I may be allowed to mention the discovery of this highly interesting bird as a singular corroboration of the opinions expressed at p. 203 and 230. It is unquestionably the fissirostral type of the *Motacillinæ*, and seems to render the rank of *Seiurus*, as a sub-genus of *Accentor*, no longer doubtful. By the kindness of M. Lesson, I am possessed of a specimen from the coast of Chili; and as I see no reason why botanists only should be commemorated by generic names, I trust I may be allowed to designate this new genus after the enterprising Zoologist by whom it was discovered.

Family, AMPELIDÆ.

Sub-family, LEIOTRICHANÆ. Nob.

Pedes *magni, validi, syndactyli.* Tarsi *elevati.* Hallux *digito externo longior.* Ungues *valdè curvati.*

Feet large, strong, syndactyle. *Tarsi* elevated. *Hinder toe* longer than the outer. *Claws* much curved.

25. Genus, LEIOTHRIX.

Rostrum *breve, valdè compressum, culmine gradatim arcuato, emarginatum.* Nares *magnæ, membranaceæ, foramine lineari, laterali.* Alæ *breves, maximè rotundatæ.* Cauda *mediocris, forficata.*

Bill short, much compressed, the culmen gradually curved, notched. *Nostrils* large, membranaceous; aperture linear, lateral. *Wings* short, much rounded. *Tail* moderate, deeply forked.

Type.—*Parus furcatus*, Temm. *Pl. Col.* India.

26. Genus, PTERUTHIUS*.

Rostrum *breve, compressum, crassum; apice lanii formæ, curvatá altèque emarginatá; culmen valdè arcuatum;* gonys *ascendens.* Nares *basales, foramine ovato rotundatove.* Rictus *altus, vibrissis paucis.* Alæ *brevissimæ, rotundatæ.* Cauda *brevis, lata, rotundata, apicibus rectricum obtusissimis.* Tarsi *læves, pallidi.*

Bill short, compressed, thick; the tip shrike-like, hooked and deeply notched; culmen considerably arched; *gonys* ascending. *Nostrils* basal, the aperture ovate or round. *Rictus* slightly bristled, wide. *Wings* very short, rounded. *Tail* short, broad, rounded; the tips very obtuse. *Tarsi* smooth, pale.

Type.—*Lanius erythropterus*, GOULD's *Century*. Nepaul.

Sub-family, PIPRINÆ.

27. Sub-genus, CALYPTURA†. (Generis Pipræ.)

Rostrum *Pardaloti.* Alæ *rotundatæ, remigibus duobus prioribus sub-gradatis.* Cauda *brevissima, divaricata, ferè occulta.* Tarsi *elongati, gracillimi.* Pedes *syndactyli.*

Bill as in *Pardalotus.* *Wings* rounded, the first and second quills slightly graduated. *Tail* very short, divaricated, almost concealed. *Tarsi* long, very slender. *Feet* syndactyle.

Type.—*Pardalotus cristatus*, VIEILL.

28. Sub-genus, METOPIA‡. (Generis Pipræ.)

Rostrum *Pipræ; plumæ capistri antrorsum extensi recumbentes.* Alæ *mediocres rotundatæ; remigibus tribus prioribus gradatis.* Cauda *elongata, lata, rotundata.* Pedes *syndactyli, validiusculi.* Scutulæ *anticæ distinctæ, tarsum circumcingentes.*

Bill as in *Pipra;* frontal feathers advancing, and directed forwards. *Wings* moderate, rounded; the three first quills graduated. *Tail* lengthened, rounded, broad. *Feet* syndactyle, rather strong. *Anterior scales* divided, enveloping the tarsus.

Type.—*Pipra galeata*, LICH. Brazil.

29. Genus, PHŒNICIRCUS.

Rostrum *Pipræ.* Alæ *brevissimæ, convexæ; remiges primariæ, rigidæ, angustæ; tres priores æquales, quarta brevis, difformis.* Cauda *lata, æqualis, rectricibus truncatis.* Pedes *syndactyli; tarsis intus plumatis.*

Bill as in *Pipra.* *Wings* very short, convex; the *primary quills* stiff, narrow, the three first equal, the fourth short and distorted. *Tail* broad, even, the feathers truncate. *Feet* syndactyle; the tarsus feathered on the inner side.

Types.—1. *P. carnifex.* (*Ampelis carnifex*, LINN.) 2. *P. nigricollis*, SW. (*Amp. carnifex*, SPIX.) 3. *P. militaris* (?), SW. (*Cotinga rouge*, LE VAILL., pl. 25.)

* Th. πλήρον *ala, et* ερυθιαω *sum ruber.* † Th. καλυπτω *velo, et* ουρα *cauda.*
‡ Th. μετωπιας, *fronto* (beetle-browed).

Sub-family, AMPELINÆ. Nob.

Pedes *breves, validi ;* digiti *distincti.* Mandibula inferior *debilissima.*

Feet short, strong; *toes* free. *Under mandible* very weak.

Genera.—*Rupicola, Ampelis, Cashmorhynchus, Calyptomina, Chrysopteryx.*

30. Genus, CHRYSOPTERYX.

Rostrum *capite brevius, sed longiusculum, è basi compressum, lateribus inflexis, culmine elevato arcuato.* Nares *subplumatæ.* Rictus *altissimus.* Alæ *longæ ; remiges ducæ priores gradatæ.* Cauda *longiuscula, æqualis.* Digiti laterales *inæquales.*

Bill shorter than the head, but rather lengthened, strong, compressed from the base, the sides inflexed; culmen elevated and arched. *Nostrils* partly feathered. *Rictus* very wide. *Wings* long; the two first quills graduated. *Tail* rather lengthened, even. *Lateral toes* unequal.

Typus.—C. ERYTHRORHYNCHUS. CH. SP. Mas *niger, remigibus basi extus flavis ; rostro aurantiaco.* Fœmina *tota olivaceo-viridis.*

Type.—*C. erythrorhynchus.* SP. CH. The *male* black, the quills yellow at the base externally; bill orange-red. The *female* entirely olive-green.

Inhabits the interior of Brazil.—MUS. NOST.

Sub-family, PACHYCEPHALINÆ.

31. Genus, LANIISOMA.

Rostrum *Pachycephalæ, sed longius ; capistro, naribus et ricto, vibrissis divergentibus benè tectis.* Alæ *longæ, remige tertiâ longissimâ.* Cauda *breviuscula, sub-rotundata, rectricibus mucronatis.* Tarsi *mediocres, halluce longiores.* Pedes *sub-syndactyli ;* digiti laterales *ferè æquales ; digitus medius halluce brevior.* Ungues *graciles, elongati, probè curvati.*

Bill as in *Pachycephala,* but longer; the front, nostrils, and rictus strongly defended by diverging bristles. *Wings* long, the third quill longest. *Tail* rather short, slightly rounded, the feathers mucronate. *Tarsi* moderate, longer than the hind toe. *Toes* sub-syndactyle; *lateral toes* nearly equal; middle toe shorter than the hallux. *Claws* slender, lengthened, fully curved.

Type.—*L. arcuatum* (*Lanius arcuatus,* MUS. PAR.)

OBS.—It is easy to perceive that this singular bird represents *Dasycephala* in its own group, and leads immediately to *Pachycephala* by means of the following sub-genus. It inhabits Brazil, and is very rare. Besides the specimen in the Parisian, there is another in the Manchester Museum.

32. Sub-genus, EOPSALTRIA*. (Generis Pachycephalæ, Sw.)

Rostrum *Pachycephalæ sed majus elongatum, rectum ; apice aduncá, gonyde rectá ; basi vibrissis paucis cinctum.* Alæ *longiusculæ, remigibus tribus prioribus gradatis.*

Bill as in *Pachycephala,* but more lengthened; straight; the tip abruptly hooked; *gonyx* straight; the base surrounded with a few bristles. *Wings* rather lengthened; the

* Th. ἠως *Aurora,* et ψαλτρια *cantatrix.*

Pedes *graciles*. Tarsi *elevati*. Ungues *longi*. Digiti laterales *valdè inæquales ; duo exteriores basi connexi*. Hallux *elongatus sed digito medio brevior*. Cauda *longiuscula, æqualis*.

first, second, and third quills graduated. *Legs* slender. *Tarsi* elevated. *Claws* long. *Lateral toes* very unequal, the two outer united at the base. *Hallux* long, but rather shorter than the middle toe. *Tail* somewhat lengthened, even.

Type.—*Yellow-breasted Thrush*. LEWIN, *Birds of N. S. W.*, pl. 23. (*Muscicapa Australis*, AUCT.)

Family, FRINGILLIDÆ.

33. Genus, FRINGILLA (Typical form).

Rostrum *exactè elongato-conicum, mandibulis ambobus crassitudine æqualibus ; maxillâ emarginatâ*. Alæ *elongatæ, acuminatæ, remex prima quintâ semper longior*. Cauda *mediocris bifurca, rectricibus lateralibus longioribus*. Pedes *graciles*. Tarsi *mediocres*. Digiti laterales *æquales, medius longissimus*.

Bill forming a perfect lengthened cone ; both mandibles of equal thickness, the upper mandible notched. *Wings* lengthened, pointed ; the first quill always longer than the fifth. *Tail* moderate, forked ; the lateral feathers the longest. *Legs* slender. *Tarsi* moderate. Lateral toes equal ; middle toe very long.

Type.—*Fringilla cælebs, montifringilla, nivalis*, &c. European form.

34. Sub-genus, ZONOTRICHIA.

Rostrum *Fringillæ*. Alæ *breviusculæ ; remex prima quatuor proximis fere æqualibus longior*. Cauda *sub-elongata, divaricatula, rectricibus lateralibus abbreviatis*. Digiti laterales *inæquales*.

Bill as in *Fringilla*. *Wings* rather short ; the first quill shorter than the four next, which are nearly equal. *Tail* rather lengthened, slightly divaricated ; the lateral feathers shortened. *Lateral toes* unequal.

Types.—*Z. leucophrys, Pennsylvanica, melodia*, &c. American form.

OBS.—The sub-genus *Chondestes*, Sw., may perhaps be only an aberrant example of this form.

35. Genus, LINARIA. Auct.

Rostrum *breviter crassèque conicum, apice integerrimâ, nec culmine arcuato*. Alæ *elongatæ, acuminatæ ; remex prima longa*. Cauda *bifurca*. Tarsi *breves*. Ungues *gracillimi ; posticus elongatus*.

Bill forming a short thick cone ; the tip entire ; culmen not arched. *Wings* lengthened, pointed ; the first quill long. *Tail* forked. *Tarsi* short. *Claws* very slender ; hinder claw lengthened.

36. Sub-genus, LEUCOSTICTE.

Rostrum *conicum, validum latum, lateribus tumidis ; tomiis ritè curvatis, nec tamen*

Bill conic, strong, broad ; the sides tumid ; the commissure regularly curved, but not an-

angulatis vel sinuatis. Rictus 4-5 *plumis elongatis, setaceis, tectus.* Alæ *longæ, acuminatæ, remex quarta tribus prioribus multò brevior.* Tarsi *elevati, graciles, halluce longiores.* Digiti laterales *æquales;* digitus medius *halluce longior.*

gulated or sinuated. *Rictus* defended by 4-5 lengthened setaceous feathers. *Wings* long, pointed; the fourth quill much shorter than the first, second, and third. *Tarsi* elevated, slender, longer than the hind toe. *Lateral toes* equal; *middle toe* longer than the hallux.

Type.—*Leucosticte tephrocotis.*—Nob.

Obs.—There can be no doubt that this is the fissirostral type by which the genera *Linaria* and *Carduelis* are united; this junction being still further explained by the *Carduelis totta* (Mus. Carl., pl. 14). A rigid analysis of the genus has now convinced me that it comprises not only the British Linnets, but the purple Finches of America, the *Pyrrhula frontalis*, Bon., and the Green Finch or Linnet of Britain.

Family, STURNIDÆ.

37. Genus, SCAPHIDURUS.

Rostrum *capite longius, crassum, validissimum, basi dilatatum et in capistrum extensum, tomiis inflexis sinuatisque; culmine arcuato; apice obtusâ.* Alæ *longæ, acuminatæ.* Cauda *gradata, scaphæ formæ.* Tarsi *mediocres, halluce longiores.* Digiti laterales *æquales.* Ungues *acuti, benè curvati.*

Bill longer than the head, thick, very strong, the base dilated, and advancing on the forehead, the margins inflexed and sinuated; culmen arched, tip obtuse. *Wings* long, pointed. *Tail* graduated, boat-shaped. *Tarsi* moderate, longer than the hind toe. *Lateral toes* equal. *Claws* acute, much curved.

Type.—*Oriolus niger.* Auct.

38. Genus, SCOLECOPHAGUS.

Rostrum *capite brevius, rectum, gracile, tomiis inflexis, haud sinuatis.* Alæ *mediocres, acuminatæ.* Cauda *ferè æqualis, plana.* Tarsi *longi, graciles.* Digiti laterales *æquales.* Ungues *graciles, acuti, parum curvati.*

Bill shorter than the head, straight, slender, the margins inflexed, but not sinuated. *Wings* moderate, pointed. *Tail* nearly even, flat. *Tarsi* long, slender. *Lateral toes* equal. *Claws* slender, acute, and but slightly curved.

Type.—*Scolecophagus ferrugineus.*—Nob.

39. Genus, MOLOTHRUS.

Rostrum *brevissimum, crassum, conicum, rostro Fringillæ simile, integerrimum, culmine levissimè arcuato.* Alæ *acuminatæ, remigibus tribus prioribus longioribus.* Cauda *ferè æqualis.* Pedes *magni, validi.* Tarsi *elevati.* Digitus internus *externo brevior.*

Bill very short, thick, conic, finch-like, entire, compressed, culmen very slightly arched. *Wings* pointed; the three first quills longest. *Tail* nearly even. *Feet* large, strong. *Tarsi* elevated. *Inner toe* shorter than the outer.

Type.—*Molothrus pecoris.*—Nob.

Family, CORVIDÆ.

40. Genus, DYSORNITHIA*.

Rostrum *brevissimum, conicum, basi latum, lateribus compressis; apice leviter arcuatâ, emarginatâ.* Vibrissæ *mastacales medium rostri attingentes.* Nares *plumis recumbentibus occultæ.* Cauda *mediocris, gradata.* Tarsi *mediocres; digitus internus brevissimus.* Unguis *posticus parum curvatus.* Plumæ *dorsi longissimæ mollesque.*

Bill very short, conic, the base wide, the sides compressed, the tip slightly bent and notched. *Gonys* ascending. *Rictus* with stiff bristles, half the length of the bill. *Nostrils* concealed by incumbent feathers. *Tail* moderate, graduated. *Tarsi* moderate. *Inner toe* shortest. *Claw* of the *hinder toe* but slightly curved. *Feathers* of the back very long and soft.

Types.—*Garrulus Canadensis, brachyrhynchus, infaustus.*

Obs.—On attentively considering the sub-family Garrulinæ, with reference to the acute observations of Prince Charles Bonaparte, I am led to believe that these birds constitute the scansorial type, representing the *Parianæ* or Scansorial Warblers. The short, broad bill, and the slender slightly curved toe, are thus explained, as also the unusual familiarity of its manners. The union of this group with the *Crypsirinæ* is effected by an undescribed Australian bird, sent to our museum by that acute botanist, Allen Cunningham, Esq.

41. Genus, CYANURUS.

Rostrum *mediocre corvi; culmine plus quam gonyde arcuato; apice ferè integerrimâ; tomiis curvatis.* Pedes *magni, validissimi; digiti laterales ferè æquales.*

Bill moderate, crow-like; the culmen more curved than the gonys; the tip nearly entire; the commissure curved. *Feet* large, very strong; lateral toes nearly equal.

Examples.—1. *C. cristatus.* 2. *Stelleri.* 3. *sordidus*, Sw. 4. *Floridanus*, Bon. 5. *coronatus*, Sw. *Syn.* 6. *cyanopogon* (*Pl. col.* 169). 7. *pileatus* (*Ill.* 58). 8. *azureus* (*Ill.* 168). 9. *formosus* (*Pica formosa*, Sw. *Syn.*) 10. *cristatellus* (*Pl. col.* 193), &c.

Obs.—This group is distinguished from the European and North Asiatic Jays by the upper mandible not being abruptly bent at the tip, or very distinctly notched, by the under being weaker, and by the powerful structure of the feet. The two outer toes also are almost equal. The three first species are aberrant, connecting this and the last group. The typical species are found only in the tropics of America and India.

Family, CINNYRIDÆ.

42. Genus, ANTHREPTES.

Rostrum *gracile, attenuatum, minutè crenatum;* mandibula inferior *basi valida ejusque*

Bill slender, attenuated, minutely crenated; the base of the *under mandible* strong, and not

* *Avis infausta. Th.* δυς *et* ορνις.

tomium non illo maxillæ occultum. Alæ *rotundatæ.* Cauda *æqualis. Digitus internus externo brevior.*

having the margin hid by that of the upper mandible. *Wings* rounded. *Tail* even. Inner toe shorter than the external toe.

Type.—*Cynniris Javanica.* Zool. Illustr., iii. pl. 121.

Family, TROCHILIDÆ.

43. Sub-genus, SELASPHORUS.

Statura *parva.* Rostrum *subulatum, rectissimum.* Plumæ *colli elongatæ.* Alæ *breves, debiles, remigibus angustatis aliquandoque acutis.* Cauda *mediocris, gradata, rectricibus apicem versus attenuatis, mucronatis.*

Stature small. *Bill* subulate and very straight. *Feathers* of the neck elongated. *Wings* short, feeble, the quills narrowed and sometimes pointed. *Tail* moderate, graduated, the feathers attenuated towards the end, their tips mucronate.

Types.—1. *S. rufus*, Nob. 2. *T. chalybeus*, Temm. 3. *T. ornatus*, Auct. 4. *T. platycercus*, Sw. (*Syn.* 95), &c.

Family, CAPRIMULGIDÆ.

44. Sub-genus, CHORDEILES. (Generis Caprimulgi.)

Rostrum *Caprimulgi.* Rictus *lævis.* Alæ *caudam æquantes ; remiges omnes integerrimæ.* Cauda *forficata.* Digitus *externus interno brevior.* Unguis *medius serratus.*

Bill as in *Caprimulgus. Rictus* smooth. *Wings* as long as the tail, all the quill feathers entire. *Tail* forked. Outer toe shorter than the inner; the middle claw serrated.

Type.—*Chordeiles Virginianus* (*Caprimulgus Americanus*, Wils.)

Family, TETRAONIDÆ.

45. Sub-genus, CENTROCERCUS. (Generis Tetraonis.)

Rostrum *compressum, culmine verticem versus prolongato capistrum intersecante.* Alæ *brevissimæ ; remigibus minoribus mucronatis.*

Bill compressed, the base of the culmen prolonged towards the crown of the head and dividing the frontal feathers. *Wings* very

Cauda *rotundata, rectricibus lanceolatis, acuminatis.* Digiti laterales *inæquales; posticus mediocris ungue ejus longior.*

short; lesser quills mucronated at their tips. *Tail* rounded, the feathers lanceolate and pointed. *Lateral toes* unequal; hind-toe moderate, longer than the claw.

Type.—*Centrocercus urophasianus*, Nob. p. 359.

46. Sub-genus, LYRURUS.

Cauda *lyræ formæ*, h.e. *altius bifurca, rectricibus lateralibus extus curvatis.* Plumæ *lucidæ.* Alæ *mediocres, remige tertiâ longissimâ.* Digiti *nudi; laterales æquales.*

Tail lyrate, *i. e.* considerably forked, the exterior feathers curved outwards. *Plumage* glossy. *Wings* moderate, the third quill longest. *Toes* naked; the lateral ones equal.

Type.—*Lyrurus tetrix*, Sw. (*Tetrao tetrix*, Auct.)

Family, ANATIDÆ.

47. Genus, DENDRONESSA.

Caput *cristatum.* Rostrum *basi æque altum ac latum, apicem versus angustatum contractumque.* Nares *sub-mediæ.* Parapterum *pulchrè coloratum.* Pedes *Anatidis.*

Head crested. *Bill* as high at the base as it is broad; towards the tip narrow and contracted. *Nostrils* placed towards the middle of the bill. *Tertial feathers* ornamented. *Feet* as in Anas.

Type.—*D. galericulata* (*Chinese Teal*, Edwards, pl. 102.)

Obs.—This is obviously the rasorial type of the *Anatinæ*. The *D. sponsa*, by the lateral advancement of the bill towards the eye, is a more aberrant species, and shows the connection of the group to *Somateria*. The fissirostral type inhabits India, and is in our Museum. As we have lately illustrated the genus *Anas* *, it seems unnecessary to repeat its characters in this place.—Sw.

* "On the Typical Perfection of the Family of Anatidæ."—Journal of the Royal Institution, No. 4.

APPENDIX, No. II.

By Mr. SWAINSON.

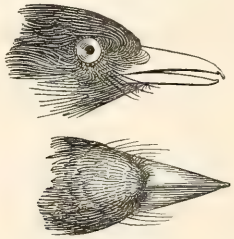
Family, LANIADÆ.

By the analogy which exists between the *Ceblepyrinæ* and the *Grallatores*, the singular fleshy lobes on the bill of *C. lobatus* and of other species is at once illustrated. We find appendages precisely similar in the Spur-winged Plovers of New Holland and India. Nay, so beautifully and regularly has Nature preserved these relations, that if the *Charadriadæ* really form the Tenuirostral division of the *Grallatores*, then the *Ceblepyrinæ*, occupying precisely the same relative station in the circle of the *Laniadæ*, actually represent the *Charadriadæ;* in other words, both these groups, being the farthest removed from their respective types, become parallel to each other, and mutually represent the *Tenuirostres*. These lobated Caterpillar-catchers constitute, according to our views, the sub-typical genus, which requires to be defined and named; but we have not, at present, sufficient space to give the necessary reasons for this projected arrangement.

TYRANNINÆ.

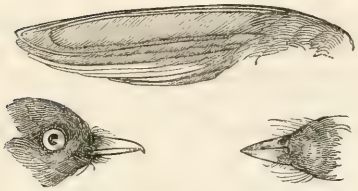
That these obscurely known Tyrant Fly-catchers, so difficult to define by descriptions, may be better understood by figures, we here add the woodcuts of their heads, accurately drawn the size of life. The size of the bill in

TYRANNUS BOREALIS,



and the strongly defined notch of the upper mandible, will bring this species within the limits of the typical group; although, from the greater quills not being distinctly notched on their inner margin, it bears a very close affinity to Tyrannula Saya. In

TYRANNULA PUSILLA,



the breadth of the bill and the relative proportions in the length of the quill feathers deserve attention. Mr. Audubon has figured, as new species, two or three small Fly-catchers, closely resembling those of Wilson's and the two here characterized; but as they are not described with the requisite precision, it is impossible to determine what are their distinguishing characters. In

TYRANNULA RICHARDSONII

the bill is obviously longer, and the whole bird much larger.

Family, SYLVIADÆ.

In reference to our remarks on the genus *Erythaca*, we feel persuaded that both *Sialia* and *Petroïca**, Sw., are types of form or sub-genera; *Sialia* being the Fissirostral type, the great length of its wings, the emarginated lesser quills, its glossy plumage, and its migratory habits, all confirming this view of its natural relations. The union of the *Saxicolinæ* with the *Parianæ*, by means of the sub-genus *Petroïca*, is so complete by the recent acquisition of another new species, sent us from Van Diemen's Land, that we can scarcely determine to which genus it truly belongs.

Our suspicions regarding the situation of *Hyliota* have proved correct: it does not belong to this family. By a singular chance, we detected among our friend Mr. Burchell's African birds the Tenuirostral type of the *Sylvianæ*, perfectly corresponding with the same type in the circle of the *Merulinæ*. This latter, we believe, only exists in the Paris Museum.

* *Zool. Illust.*, Second Series, pl. 36.

Family, AMPELIDÆ.

The discovery of the genus *Pteruthius*, for a knowledge of which we are indebted to Mr. Gould, the Animal Preserver to the Zoological Society, has enabled us to confirm all we venture to express on the aberrant divisions of this family. The chain of affinity between the *Bombycillinæ* and the *Piprinæ* is now rendered unquestionable by the intervention of the *Pachycephalinæ* and the *Leiotrichanæ*. The strong Shrike-like bill of the genus *Pteruthius*, which has induced Mr. Vigors to call it a *Lanius*, is at once explained by the supposition of this being a Dentirostral type. An examination of its syndactyle feet, perfectly similar to those of *Leiothrix*, proves that this singular bird has not the most remote affinity to the genus wherein it has been placed. The intervening types of the aberrant division, few in the number of their species, but highly interesting in reference to their analogical relations, are named and characterized in Appendix No. I.

Family, CORVIDÆ.

The analysis of the *Ampelidæ*, which is the Tenuirostral family of the *Dentirostres*, has thrown considerable light, as might be expected, upon the nature of the corresponding group in the *Corvidæ*. We feel persuaded that the Coracinæ, comprehending the genera *Coracina*, Vieill., *Cephalopterus*, Geoff., and one or two others, truly belong to this family, and not to the *Ampelidæ*, as supposed by Le Vaillant. They represent, in fact, the Fruit-eaters among the Crows.

The five leading divisions are now, as it were, perfect, since they represent all the tribes, families, and genera of the order Insessores. The long, conic, compressed, corvine bill of the *Coracinæ*, setting aside their large size and gregarious habits, offers a marked distinction between them and the genuine *Ampelidæ*.

The marked liberality of the zoologists attached to the British Museum, who have thrown open, without reserve or jealousy, the whole of the national collection to our unrestrained use, has enabled us to add the following new species to the Fauna of Northern America; specimens, authenticated as coming from Hudson's Bay, existing in that valuable repository of science.

Scolopax leucurus. (Swainson.) *White-tailed Snipe.*

Genus, Scolopax.

Ch. Sp. Scolopax leucurus, *rectricibus sedecem: lateralibus albis basi extus bis terve nigro fasciatis; abdomine transversè fasciato.*

Sp. Ch. White-tailed Snipe, tail of sixteen feathers: the three lateral ones pure white, with 2—3 basal black bands on the outer web; belly transversely banded.

A single specimen of this bird, in fine and perfect plumage, exists in the British Museum. It is readily distinguished from all those which we have here described, by the great proportion of white in the tail feathers, and by having the middle of the body distinctly crossed by dusky black lines.—Sw.

DESCRIPTION

Of a specimen, from Hudson's Bay, in the British Museum.

Colour.—Plumage of *Sc. Drummondii* and *Wilsonii*, except that the belly is barred with blackish-grey, two or three bars on each feather. *Tail:* three or four outer pairs of feathers white, with one or two irregular blackish bars near the bases of the outer webs; three central pairs black, with a broad ferruginous bar near the end, separated from the narrow white tip by a black line. *Bill* and *legs* brownish (in the dried specimen).

Form.—*Bill* much like that of *Sc. Drummondii*, but scarcely so much dilated at the point, and stouter at the base. Second quill equal with the first. *Tail*, of sixteen feathers, considerably rounded; the three outer pairs of feathers diminishing successively in breadth, but not much; the outer ones having about three-fourths of the breadth of the middle ones. *Tarsus* longer than in the two species just mentioned.

Dimensions.

	Inch.	Lin.		Inch.	Lin.		Inch.	Lin.
Length, total . . .	10	6	Length of bill above . .	2	5	Length of middle claw .	0	3
,, excluding bill .	8	6	,, of bill to rictus .	2	4½	,, of hind toe .	0	4½
,, of tail . .	2	2	,, of tarsus . .	1	4½	,, of hind claw .	0	2½
,, of wing . .	5	4	,, of middle toe .	1	4¼			

—R.

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[The references to groups or species, whose characters or descriptions are given, are in SMALL CAPITALS, if in Latin. Synonymes, and groups or species accidentally referred to, are in *Italics*.]

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THE END.

ERRATA,

WHICH THE READER IS REQUESTED TO CORRECT WITH A PEN.

Page

86, line 9, for "PLATE XXXII.," read "PLATE XXX."
108, line 13, for "*Ceblepyrus*," read "*Ceblepyris*."
130, line 8, for "*Ceblepyrini*," read "*Ceblepyrinæ*."
131, line 2 from the bottom of note, for "*Ripidura*," read "*Rhipidura*."
136, line 11, for "*Edolinæ*," read "*Edolianæ*."
142, in the middle of the page, for "*Flycatcher*," read "*Tyrant Flycatcher*."
142, insert above line 4 from the bottom of text, reference to "PLATE XLV."
144, insert below line 7, reference to "PLATE XLVI."
144, line 14, for "*phebe*," read "*phœbe*."
144, line 15, for "*obscurus*," read "*obscura*."
146, insert below line 19, reference to "PLATE XLVI."
153, line 7, for "*Phillastrephus*," read "*Phyllastrephus*."
159, line 5 from the bottom of note, for "*Tricophorus*," read "*Trichophorus*."
169, line 19, for "*Pipa*," read "*Pipra*."
171, line 14, for "*Colurisoma*," read "*Collurisoma*."
179, insert above line 9 from the bottom, reference to "PLATE XXXVI."
204, lowest line of text, for "*Diops*," read "*Dyops*."
220, line 14, for "No. 140," read "No. 141."
233, line 13, for "*Parus Indicus*," read "*Parus furcatus*."
233, line 8 from the bottom, for "*Lep*," read "*Sep*."
233, line 4 from the bottom, for "FLYCATCHER," read "GREENLET."
235, line 10, for "FLYCATCHER," read "GREENLET."
236, line 2, for "*olivacea*," read "*olivaceus*."
236, line 2 from the bottom, for "*Lep*," read "*Sep*."
252, lines 13 and 17, for "*Schœniclus*," read "*Schœnicla*."
265, line 4 from the bottom, for "FINCH," read "LINNET."
269, above line 8 from the bottom of text, insert reference to "PLATE LXVIII."
270, line 7, for "*Cloris*," read "*Chloris*."
301, line 17, for "*Denbrobates*," read "*Dendrobates*."
303, line 4 from the bottom, for "*Plates*," read "*Plantes*."
311, after line 19, insert reference to "PLATE LVI."
363, line 1, for "*urophasianellus*," read "*urophasianus*."
398, line 2, for "*Limosa*, BRISS." read "*Scolopax*, LINN."
398, on note, for "LIMOSA EDWARDSII," read "LIMOSA CANDIDA, (*Briss.*)"—When this note was written, I did not advert to the bird having been previously named by Brisson, and also by Latham, who terms it "*Recurvirostra alba*."—*Ind. Orn.*, ii., p. 787.
436, line 19, for "*acuta*," read "*caudacuta*."
454, line 3, from the bottom of note, for "*crustata*," read "*cristata*."

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